Pregnancy Risk Assessment Monitoring System

PRAMS Report 2003

Michigan Department of Community Health

MDCH

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Executive Summary

The Pregnancy Risk Assessment Monitoring System (PRAMS) is a population-based survey of a random sample of women who have given birth to a live-born infant in Michigan. The topics included in this survey were selected based on their relevance to maternal and infant morbidity and mortality. The following summary highlights important findings within the report:

- Almost 60% of women indicated that they had an intended pregnancy in 2003.
- Prior to pregnancy, about 44.3% of women reported using contraception, with condoms being the most popular method (51.4%).
- Among the 7.3% of infants who were considered low birthweight (< 2,500 grams), 81.7% were moderately low birthweight (1500-2499 grams).
- Among the 19.8% of women who reported entering prenatal care (PNC) after the first trimester/not at all, 33.1% reported at least two or more barriers to on time PNC entry.
- Approximately 31.6% of women did not breastfeed their infant.
- The most frequently cited reasons for not breastfeeding were "did not like breastfeeding" at 41.75%, "other" at 30.5%, and "had to return to work/school" at 28.3%.
- About 6.0% of women indicated that they drank alcohol during their pregnancy.
- Approximately 84.6% of women reported not smoking in the last three months of their pregnancy.
- Almost 30% of women reported placing their infant to sleep on either the stomach or side. In addition, 18.2% of women stated that their infant always/almost always bed shared.
- Among the 3.4% of women who indicated experiencing physical abuse during pregnancy, the husband/partner was named the abuser 85.9% of the time.
- About 60.3% of women were aware and instructed by a health care provider about the benefits of folic acid. In addition, 29.4% of women indicated they consumed a multivitamin daily in the month before pregnancy.
- Among the income-eligible women, 57.5% of both postpartum women and infants participated in WIC.

Introduction

The Michigan Pregnancy Risk Assessment Monitoring System (PRAMS) is an ongoing population-based survey of postpartum mothers who delivered live births in Michigan. PRAMS is part of a Centers for Disease Control and Prevention (CDC) initiative to reduce infant mortality, low birthweight, and other adverse birth outcomes by providing information for developing, implementing, and evaluating maternal and infant health intervention programs. This data is utilized to monitor improvement in both national and state pregnancy-related health objectives, including the increase of infants with positive birth outcomes. Furthermore, PRAMS is used to identify and monitor selected self-reported maternal behaviors and experiences that occur before, during, and after pregnancy among women who deliver live-born infants. This report covers a variety of topics, including low birthweight, contraceptive use, pregnancy intention, health insurance, prenatal care, breastfeeding, alcohol and tobacco use, violence against women, folic acid awareness, and WIC participation.

From a frame of eligible birth certificates, over 2000 postpartum women were selected to be surveyed in 2003. PRAMS is a combination mail/telephone survey in which women are contacted and surveyed initially via mail. If the woman does not respond to the original mailing, the follow-up included additional mailings and telephone contact.

Throughout this report, selected maternal and child health indicators are presented graphically with detailed explanations. PRAMS data are intended to be representative of Michigan women residents whose pregnancies resulted in a live birth. Therefore, all results presented have been weighted to provide estimates that are reflective of women who had a live birth in 2003 (see Appendix I for further information on weighting). Since PRAMS only surveys women with a live birth, caution is advised when interpreting and generalizing the results to all pregnant women and does not include pregnancies that end in abortion or miscarriage. Results with their 95% confidence intervals (CI) are also presented along with demographic characteristic breakdowns in appended tables.

Maternal Demographics

Definition:

Information about maternal demographic characteristics was obtained from both the birth certificate information and the PRAMS questionnaire. Maternal age, race/ethnicity, and marital status were obtained from the birth certificate. Information on pre-pregnancy insurance and income was obtained from the PRAMS questionnaire. Two questions regarding pre-pregnancy insurance status were asked of all respondents:

Question #1: Just before you got pregnant, did you have health insurance? (Do not count Medicaid)
_No
_Yes

Question #2: Just before you got pregnant, were you on Medicaid?
_No
_Yes

Women who answered 'Yes' to question #1 and 'No' to question #2 were classified as having private insurance prior to pregnancy. Women who answered 'Yes' to question #2 were classified as participating in Medicaid prior to pregnancy. Women who answered 'No' to both questions #1 and #2 were classified as having no insurance prior to pregnancy.

Results:

In Michigan, approximately 33.7% of live births were to women less than 25 years of age (Figure #1). White, Non-Hispanic women made up about three-quarters of the sample in 2003 (75.0%). The most prevalent minority was Non-Hispanic Blacks (16.5%) followed by Hispanics (5.1%), and then Asian/Pacific Islanders (3.1%) (Figure #2). Having at least a high school education/GED was reported by 33.6% of the women sampled and having at least a college degree by over a quarter (27.3%) (Figure #3). With regard to marital status, the vast majority of women (63.3%) were identified as being married (Figure #4). Prior to pregnancy, 15.2% of women reported receiving Medicaid, 19.1% were classified as being 'uninsured' and 65.8% of women responded that they had private health insurance (Figure #5).

Public Health Implications:
Almost half of the women delivering live births in Michigan have a high school diploma or less. This underscores the need for all organizations serving women of childbearing age to tailor outreach efforts and materials to a very basic literacy level. About one in five women who delivered in 2003 did not have health insurance prior to becoming pregnant. Access to care remains a challenging issue, and methods need to be developed to identify and refer women as soon as possible in their pregnancies. There is a slight decrease in the percent of women under the age of twenty (9.4% in 2003 compared to 10.5% in 2002) delivering live births in Michigan and a slight increase (54.4% in 2003 compared to 51.6% in 2002) of those in their twenties. Therefore, providing tailored educational messages about the importance of pre-conceptual health remains very important.

Reference Table: #1

Maternal Demographics

Figure 1:
Prevalence of maternal age,
2003 MI PRAMS

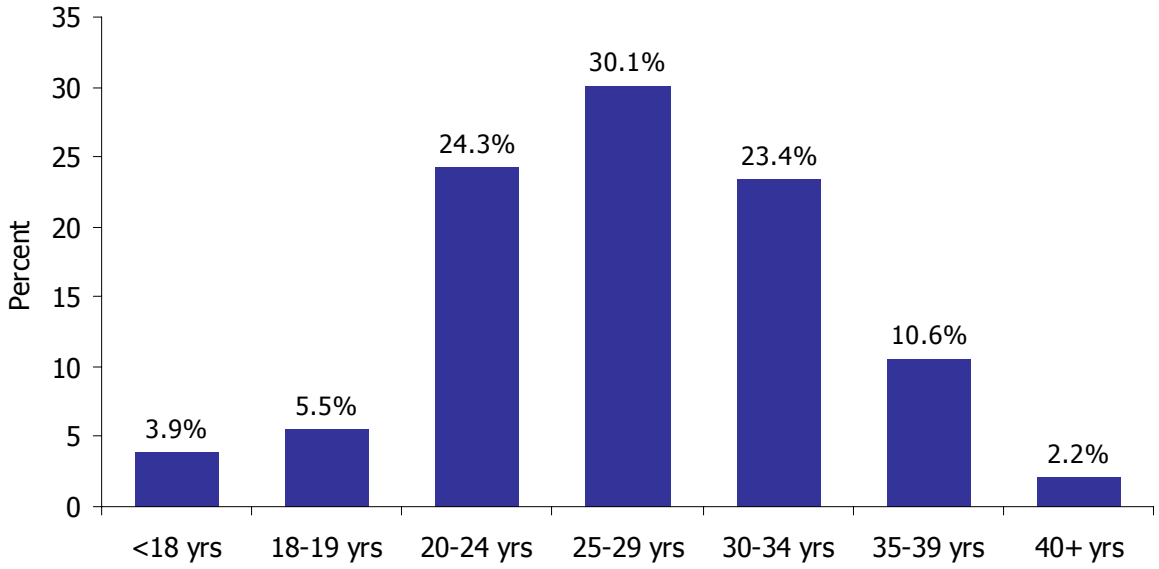
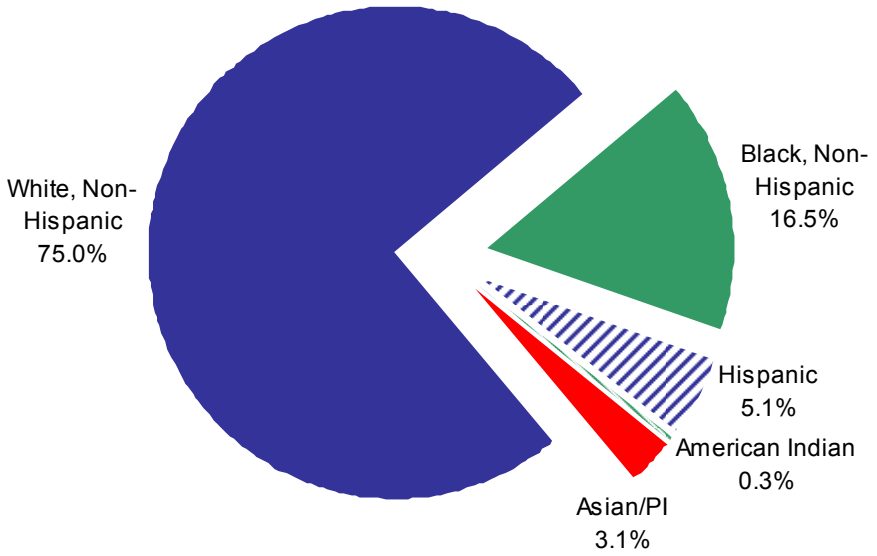


Figure 2:
Prevalence of maternal race/ethnicity,
2003 MI PRAMS



Maternal Demographics

Figure 3:
Prevalence of maternal education,
2003 MI PRAMS

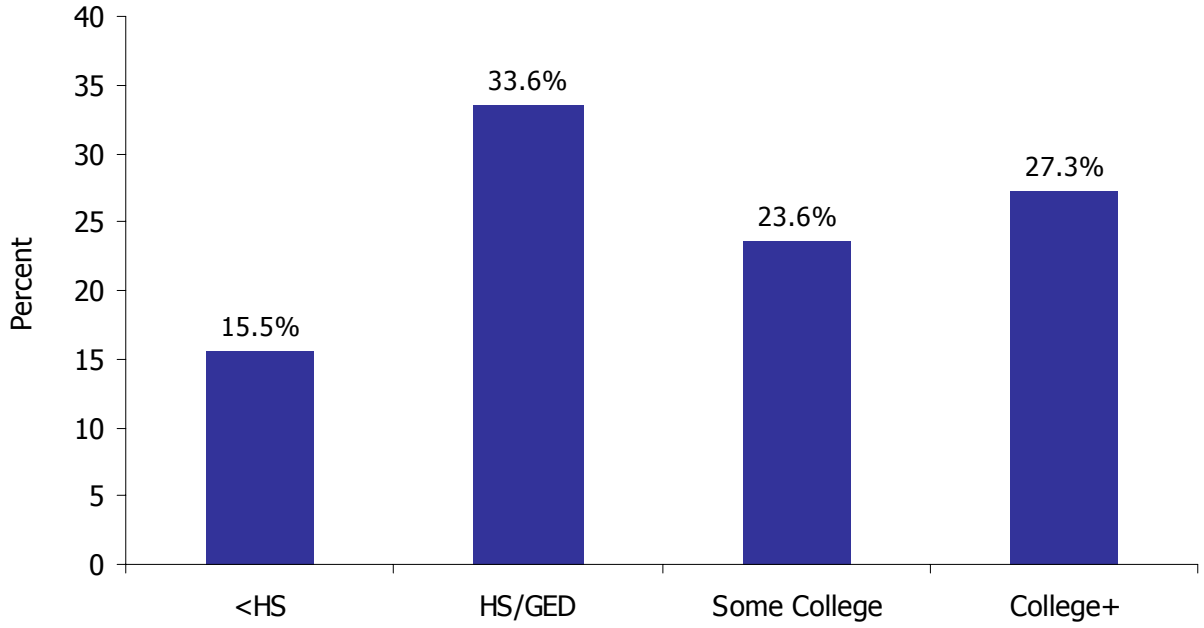
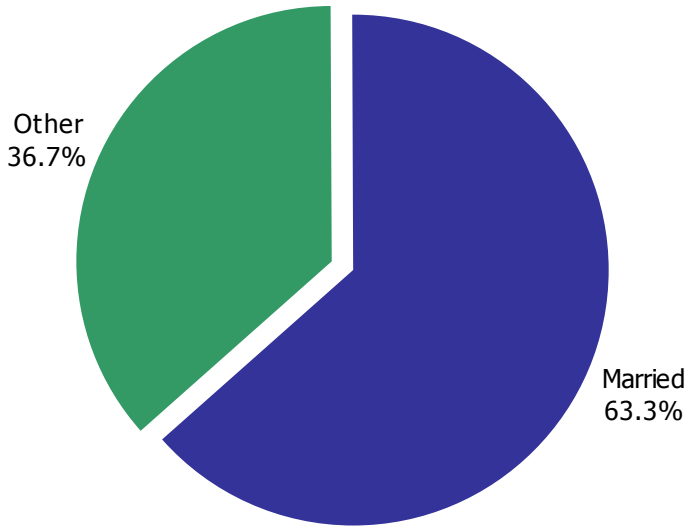


Figure 4:
Prevalence of marital status,
2003 MI PRAMS

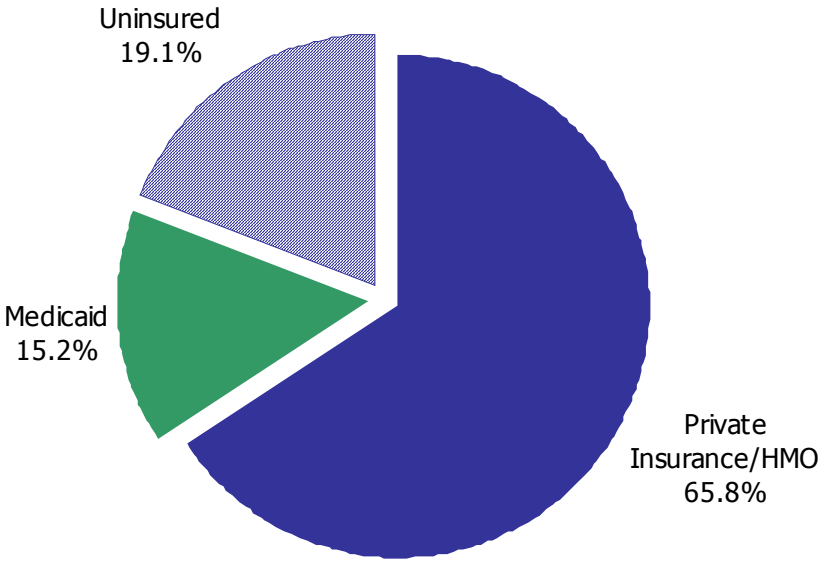


Maternal Demographics

Figure 5:

Prevalence of insurance status,

2003 MI PRAMS



Unintended Pregnancy

Definition:

Information regarding pregnancy intention was derived from question #10:

> *Question #10: Thinking back to just before you got pregnant, how did you feel about becoming pregnant?*
> *_I wanted to be pregnant sooner*
> *_I wanted to be pregnant later*
> *_I wanted to be pregnant then*
> *_I didn't want to be pregnant then or at any time in the future*

An intended pregnancy was one in which the mother answered that she wanted to be pregnant then or sooner. Women who wanted to be pregnant later or not at all were classified as having an unintended pregnancy. Unintended pregnancy can be further subdivided into two categories: mistimed pregnancies or unwanted pregnancies. Mistimed pregnancies are those in which the mother wanted to be pregnant later than the time she became pregnant. Unwanted pregnancies were those in which the mother did not want to be pregnant then or in the future.

Results:

In 2003, 40.5% of women who delivered a live birth had an unintended pregnancy, with about 74.2% of those reported as mistimed (Figure #6). When stratified by race/ethnicity, unintended pregnancy was found to be the highest in Non-Hispanic Black and Hispanic women (63.3% and 46.0% respectively), followed by Non-Hispanic Whites and Asian/Pacific Islanders (35.7% and 30.9%, respectively) (Figure #7). Furthermore, both maternal age and educational status are directly proportional to intended pregnancy. Women over 35 years of age were five times more likely to have an intended pregnancy compared to those less than 18 years of age (Figure #8). In addition, women with a college degree had the highest prevalence of intended pregnancy (79.2%) while those with less than a high school education had the lowest prevalence (37.1%) (Figure #9). Women with either Medicaid or no insurance were less likely to report an intended pregnancy compared to women with private insurance (Figure #10). Of the 49.3% of women with an unintended pregnancy who reported not using contraception, 72.4% indicated that they had a mistimed pregnancy. Among the 50.7% of women who reported contraceptive use prior to pregnancy (Figure #11), the methods most frequently associated with contraceptive failure were condoms (34.5%), withdrawal (24.4%), and birth control pills (20.4%) (Figure #12).

Public Health Implications:

Unintended pregnancies are more likely to occur in socio-economically vulnerable groups: women under the age of 20, uninsured, low income (Medicaid participation as a proxy), and racial/ethnic minorities. Slightly over half of women experiencing an unintended pregnancy indicated using a contraceptive method at the time they became pregnant, with condoms, withdrawal, and birth control pills being the most commonly utilized contraceptive methods reported. This suggests that women are either not informed or misunderstand information regarding the effective use of contraceptive methods to prevent pregnancy and that contraceptive services may not be available to the women who need them the most. Tailored family planning services to women who never gave birth, are unmarried, or are enrolled in Medicaid, along with education on appropriate contraceptive use in postpartum are needed to reduce unwanted pregnancies. Improving family planning services to better meet the needs of all women of reproductive age is one of the public health priorities in Michigan.

Reference Tables: #2 - #5

Unintended Pregnancy

Figure 6:

Prevalence of intended and unintended pregnancies and types of unintended pregnancies, 2003 MI PRAMS

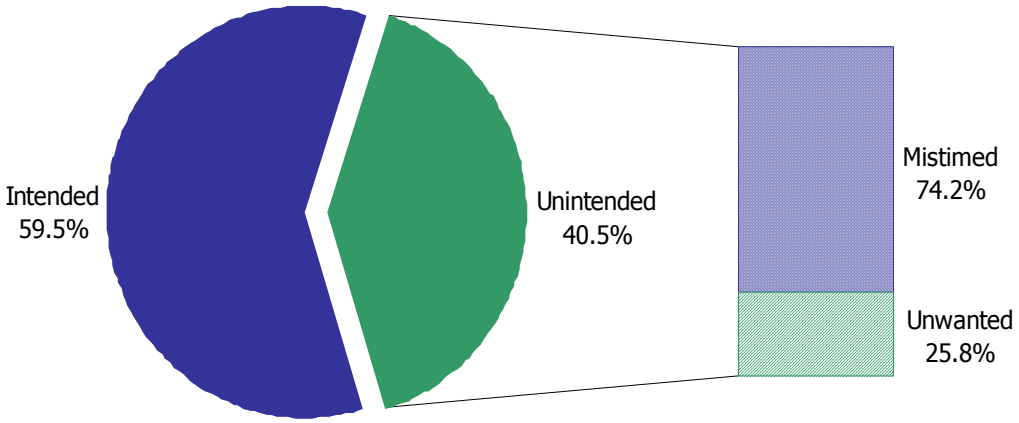
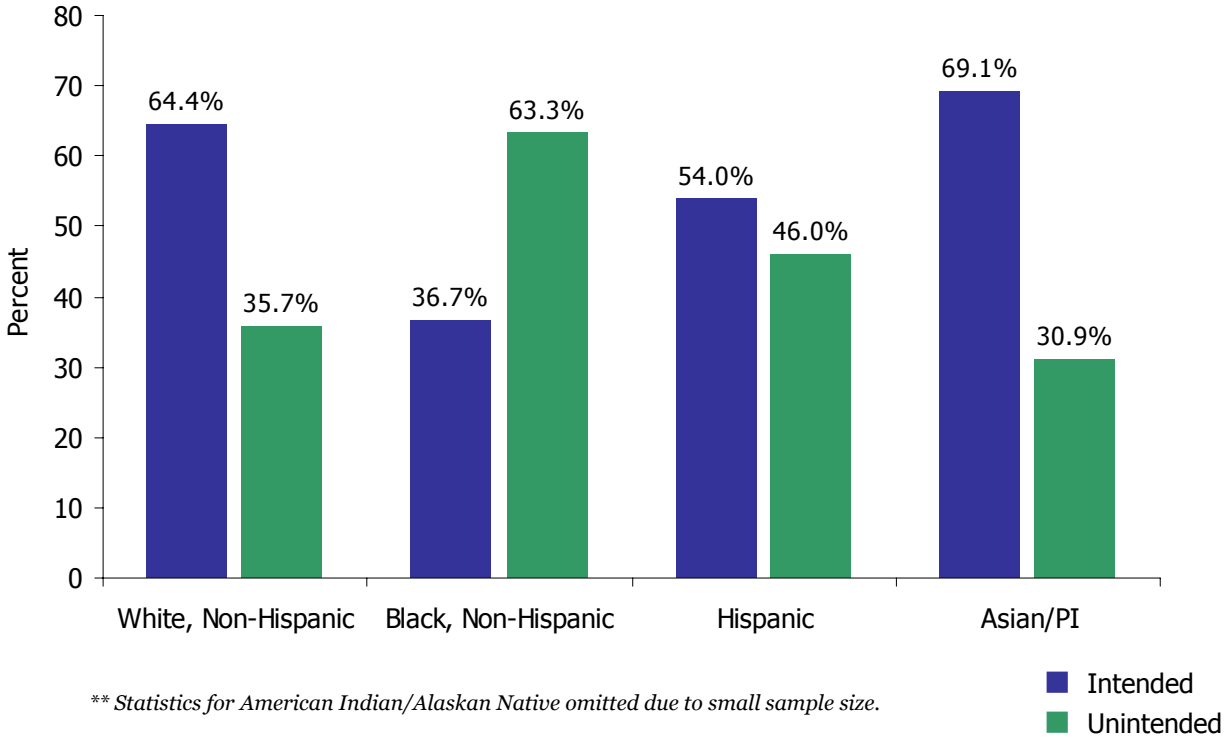


Figure 7:

Prevalence of intended and unintended pregnancies by maternal race/ethnicity; 2003 MI PRAMS



*** Statistics for American Indian/Alaskan Native omitted due to small sample size.*

Unintended Pregnancy

Figure 8:

Prevalence of intended and unintended pregnancies by maternal age, 2003 MI PRAMS

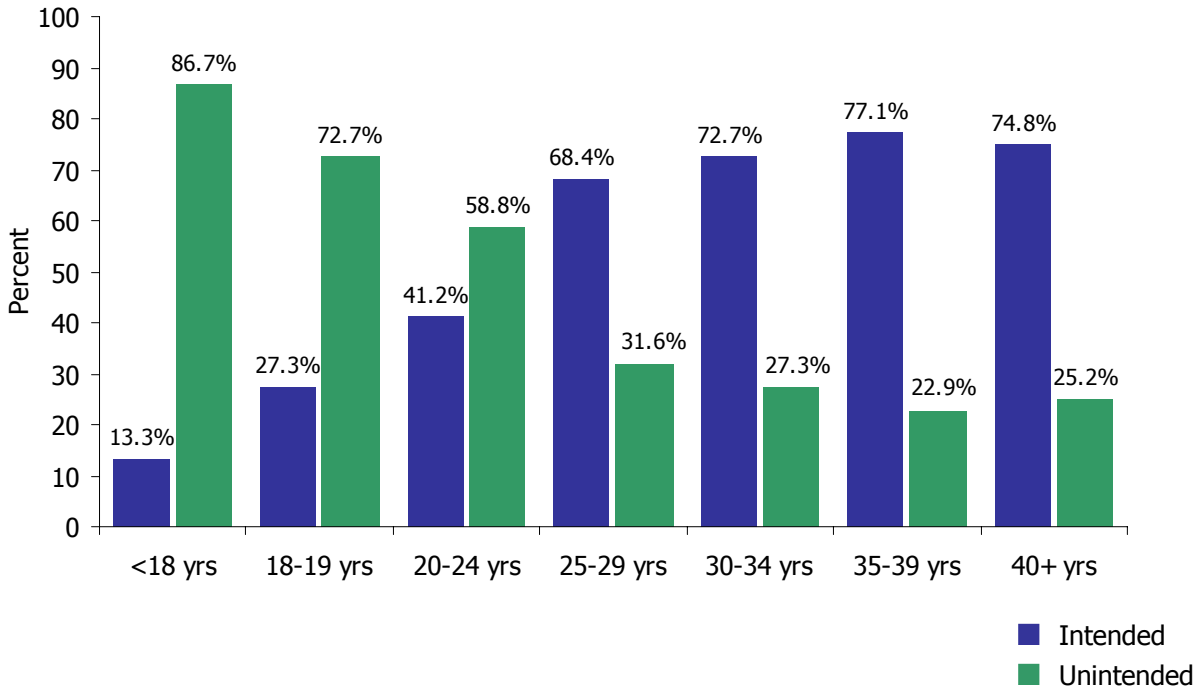
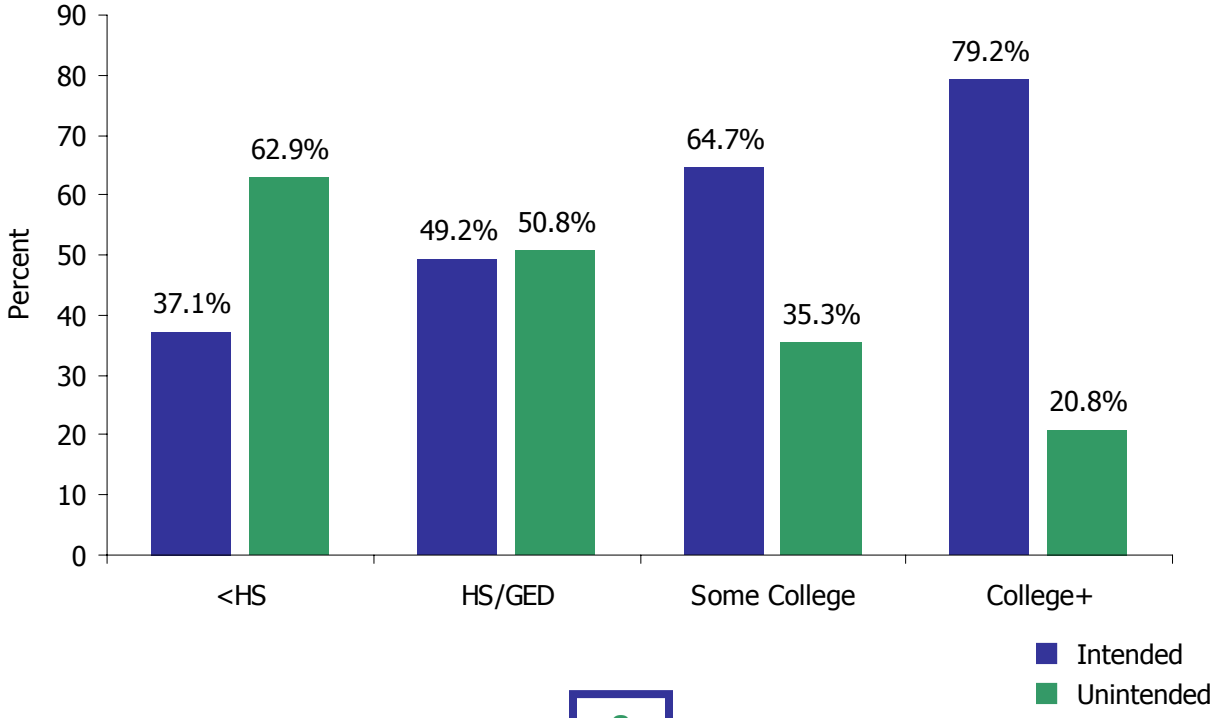


Figure 9:

Prevalence of intended and unintended pregnancies by maternal education, 2003 MI PRAMS



Unintended Pregnancy

Figure 10:

Prevalence of intended and unintended pregnancies by maternal pre-pregnancy insurance status, 2003 MI PRAMS

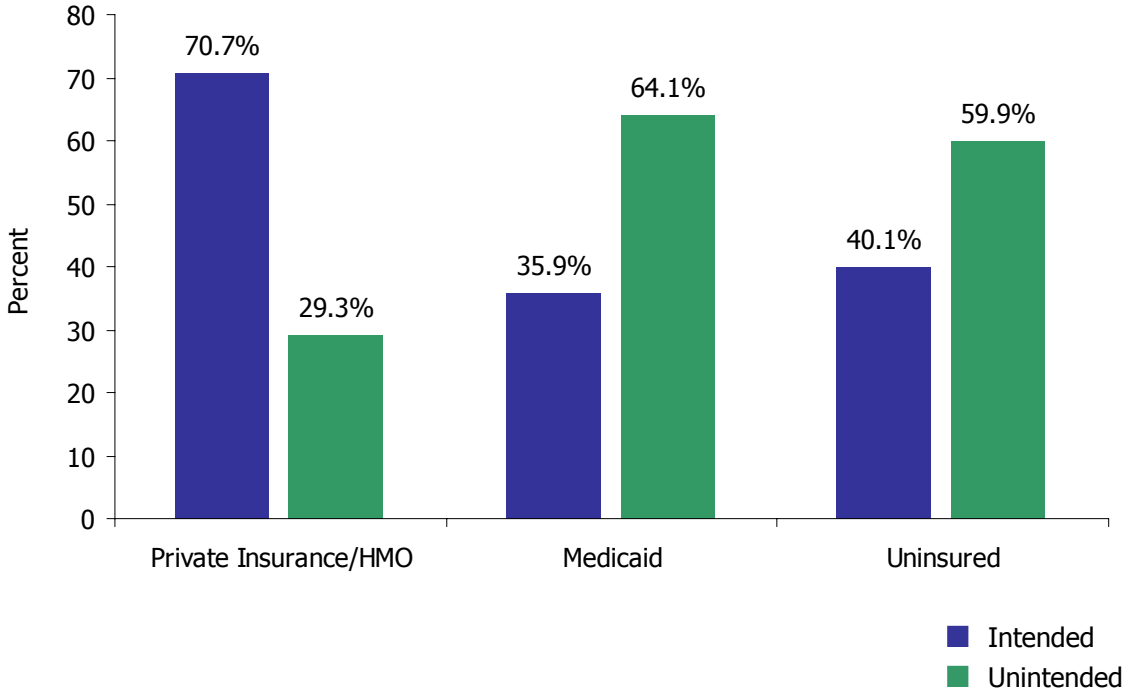
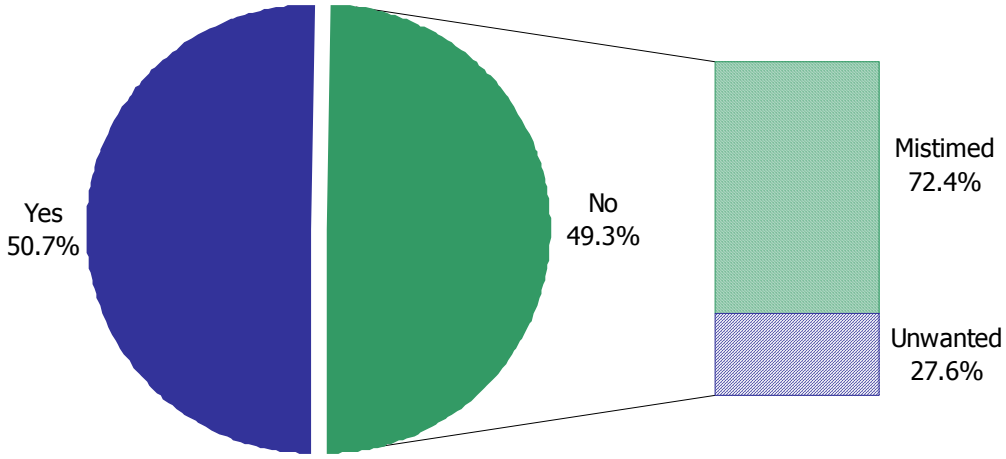


Figure 11:

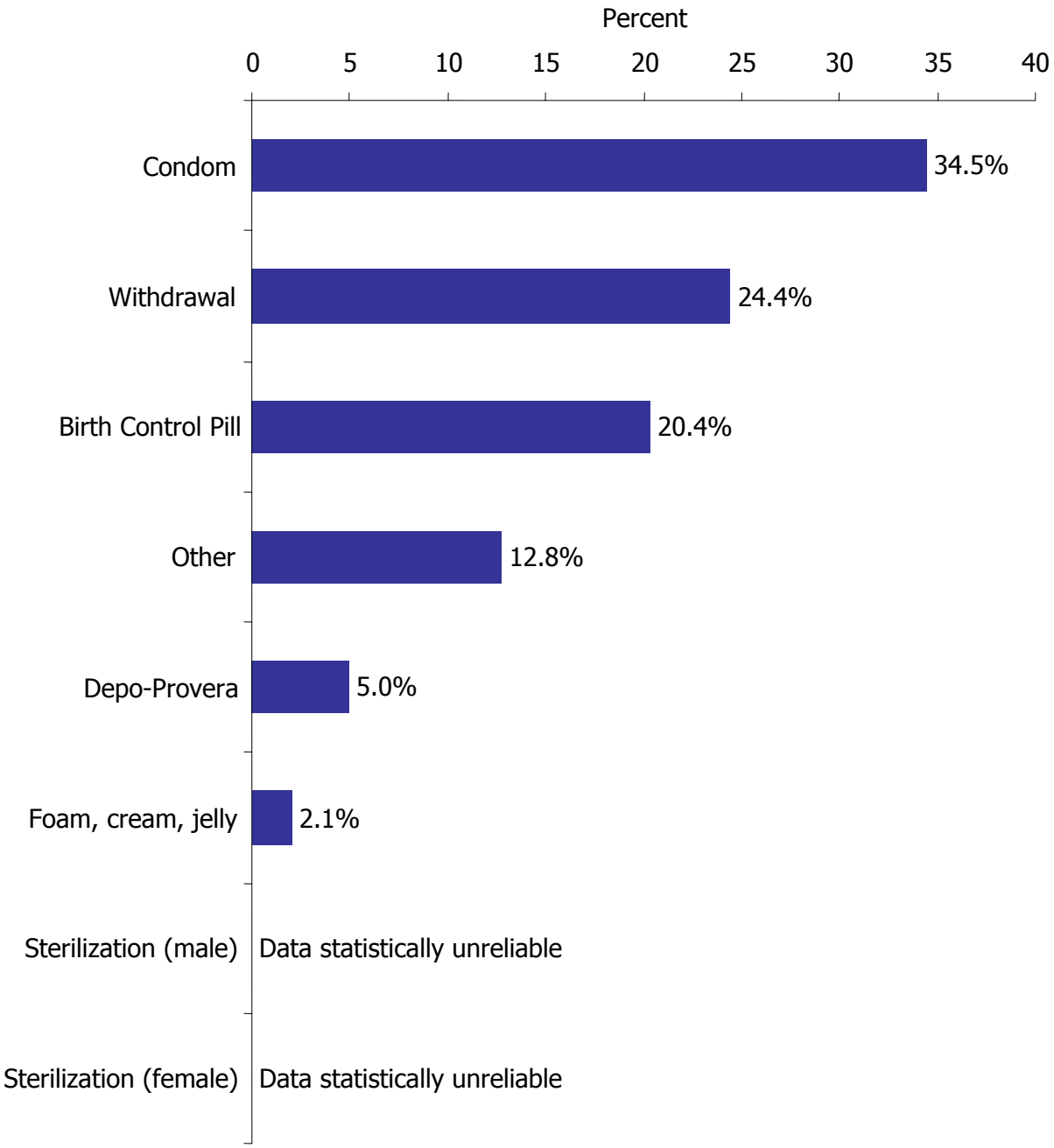
Prevalence of pre-pregnancy contraception use among women with an unintended pregnancy, 2003 MI PRAMS



Unintended Pregnancy

Figure 12:

Method of pre-pregnancy contraception among women with an unintended pregnancy, 2003 MI PRAMS



Contraception

Definition:

Women were asked several questions regarding their use of contraception prior to and following their pregnancy. All women surveyed were asked the following question:

Question #12: When you got pregnant with your new baby, were you or your husband or partner doing anything to keep from getting pregnant?
_No
_Yes

Those who answered 'No' to question #12 were asked question #13:

Question #13: What were you or your husband or partner's reasons for not doing anything to keep from getting pregnant?
_I didn't mind if I got pregnant
_I thought I could not get pregnant at that time
_I had side effects from the birth control method I was using
_I had problems getting birth control when I needed it
_I thought my husband or partner was sterile
_My husband or partner didn't want to use anything
_Other

Those who answered 'Yes' to question #12 skipped question #13 and answered question #14:

Question #14: When you got pregnant with your new baby, what were you or your husband or partner doing to keep from getting pregnant?
_Pill
_Condoms
_Foam, cream, or jelly
_Norplant®
_Shots (Depo-Provera®)
_Withdrawal
_Tubes tied (sterilization)
_Vasectomy (sterilization)
_Other

To gather information on the use of postpartum contraception, participants were asked the following:

Question #66: Are you, your husband or partner doing anything now to keep from getting pregnant?
_No
_Yes

Women who answered 'No' were asked an additional question:

Question #67: What are you and your husband or partner's reasons for not doing anything to keep from getting pregnant now?

_ I am not having sex
_I want to get pregnant
_I don't want to use birth control
_My husband or partner doesn't want to use anything
_I don't think I can get pregnant
_I can't pay for birth control
_I am pregnant now
_Other

Results:

Prior to pregnancy, 55.7% of women reported not using contraception (Figure #13). In 2003, the prevalence of contraception use did not change significantly when stratified by maternal age. Women over 40 years of age had the highest rate of non-utilization (66.0%) while women between the ages of 35-39 had the lowest rate (45.2%) (Figure #14). Contraception non-use was most frequently reported among Asian/Pacific Islanders (78.2%) followed by White, non-Hispanics (58.5%). Black, Non-Hispanic women were the most likely to report contraception use (53.5%). The use of contraceptives mirrors education levels, with the highest prevalence of non-users in women with less than high school and the highest prevalence of users in the group of those with at least college degrees (58.7% and 51.3% respectively) (Figures #15-#16). Women without medical insurance were the most likely to report non-use of contraception (61.7%), followed by women on Medicaid (57.3%). Women with private insurance had the highest prevalence of contraceptive use compared to those covered by Medicaid or not having any insurance (48.7% vs. 42.7% and 38.4%, respectively). However, the prevalence was less than 50%, which means that not even half of women are contraceptive users regardless of private health insurance status (Figure #17). Among women who reported using contraception, the most popular methods were condoms (51.4%) followed by birth control pills (27.2%) (Figure #18). The three most commonly cited reasons for non-usage were "Didn't mind getting pregnant" (38.5%),"Husband or partner did not want to use birth control" (24.1%) and "Thought could not get pregnant" (24.1%) (Figure #19).

During the postpartum period, about 85.5% of women reported contraceptive use with similar prevalence rates reported across all of the demographic strata (Figure #20). Utilization of contraceptives postpartum did not vary greatly by mother's age, with over 80% of women reporting utilization in all age groups except women over 40 years of age (76.6%) (Figure #21). In addition, a similar high use of contraception methods postpartum was reported among all race/ethnicity groups, with White Non-Hispanic women having the highest rate at 86.0% and Asian/Pacific Islanders having the lowest rate at 73.8% (Figure #22). The rate of contraception use was similar across educational levels, ranging from the highest of 86.1% to the lowest of 84.7% (Figure #23). Health care professionals have the unique opportunity of teaching women during the prenatal period about the value of contraception in the postpartum period and PRAMS data shows the importance of it. Women who did not have contraceptive use discussed with them during prenatal care were almost twice as likely to report contraceptive non-utilization compared to those who did have it discussed by a healthcare professional (Figure #24). The most commonly cited reason for contraceptive non-use in the postpartum period was "did not want to use birth control" (Figure #25).

Public Health Implications:

Contraceptive use in the postpartum period is highest among women under the age of twenty, and among Black, non-Hispanic women. However, this group had the highest rates of unintended pregnancies. Therefore, providing family planning counseling on the choice of contraceptive method is very important, leading to prevention of very short inter-pregnancy intervals that are associated with various adverse maternal and infant health outcomes. Women who spoke to a health care provider about contraceptive use during the prenatal period were more likely to use contraceptives during the postpartum period. The reasons cited for not using a contraceptive method postpartum were "not wanting to use a birth control method, not having sex, husband/partner does not want to use, and wants to get pregnant". We can conclude that the contraceptive counseling offered by health care professionals during the prenatal period is important to prepare women for the use in the postpartum period. Stressing the importance of spacing births and discussing contraceptive use early on should help address these issues.

Reference Tables: #6 - #10

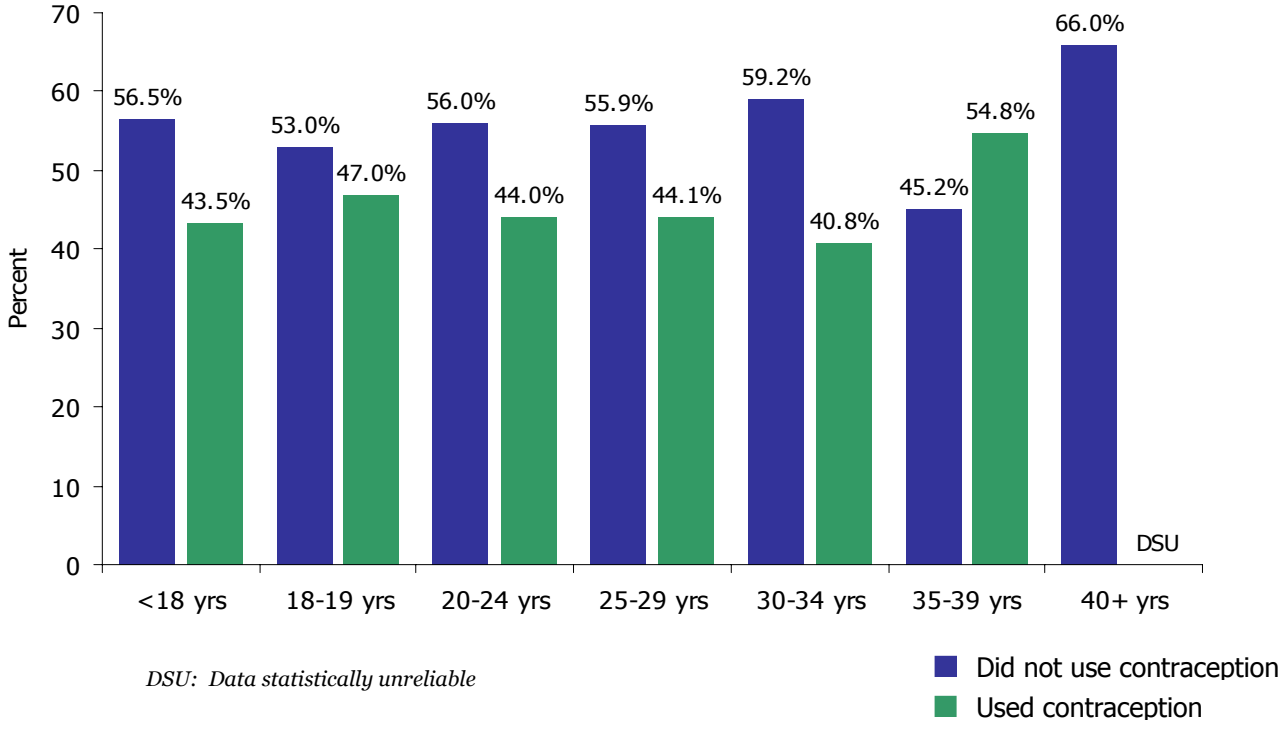
Contraception

Figure 13:

Prevalence of contraceptive use prior to pregnancy,
2003 MI PRAMS

Figure 14:

Prevalence of contraceptive use prior to pregnancy by maternal age,
2003 MI PRAMS

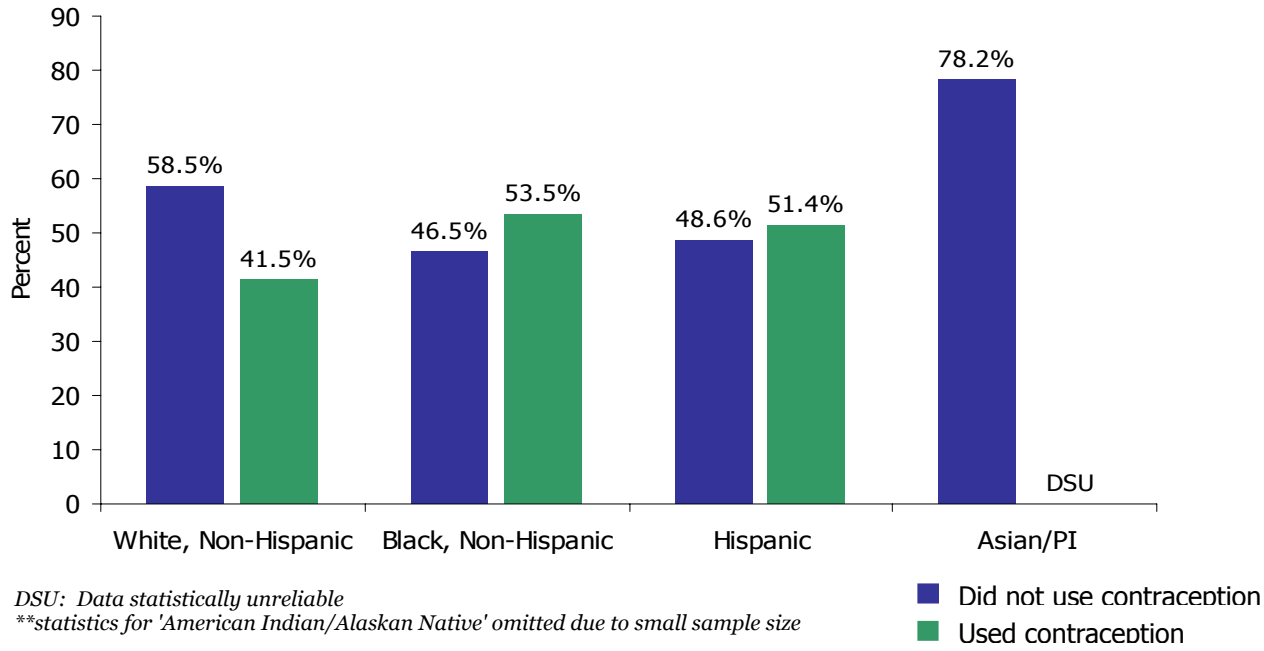


DSU: Data statistically unreliable

Contraception

Figure 15:

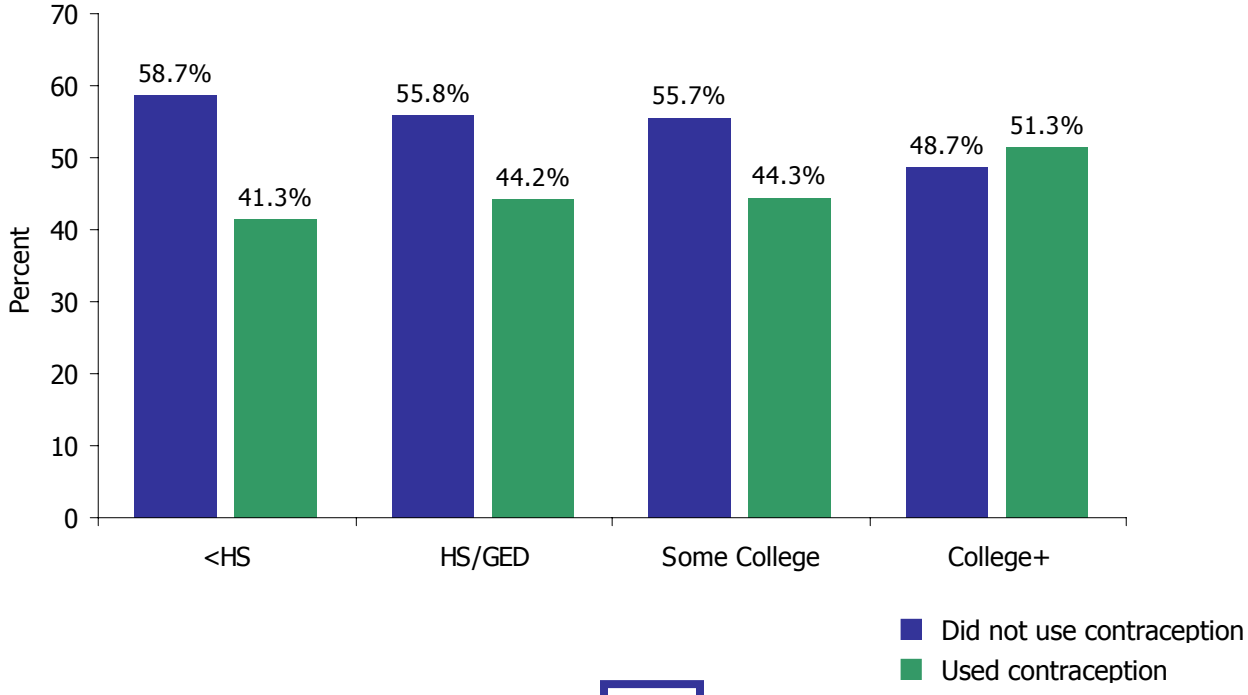
Prevalence of contraceptive use prior to pregnancy by maternal race/ethnicity, 2003 MI PRAMS



DSU: Data statistically unreliable
***statistics for 'American Indian/Alaskan Native' omitted due to small sample size*

Figure 16:

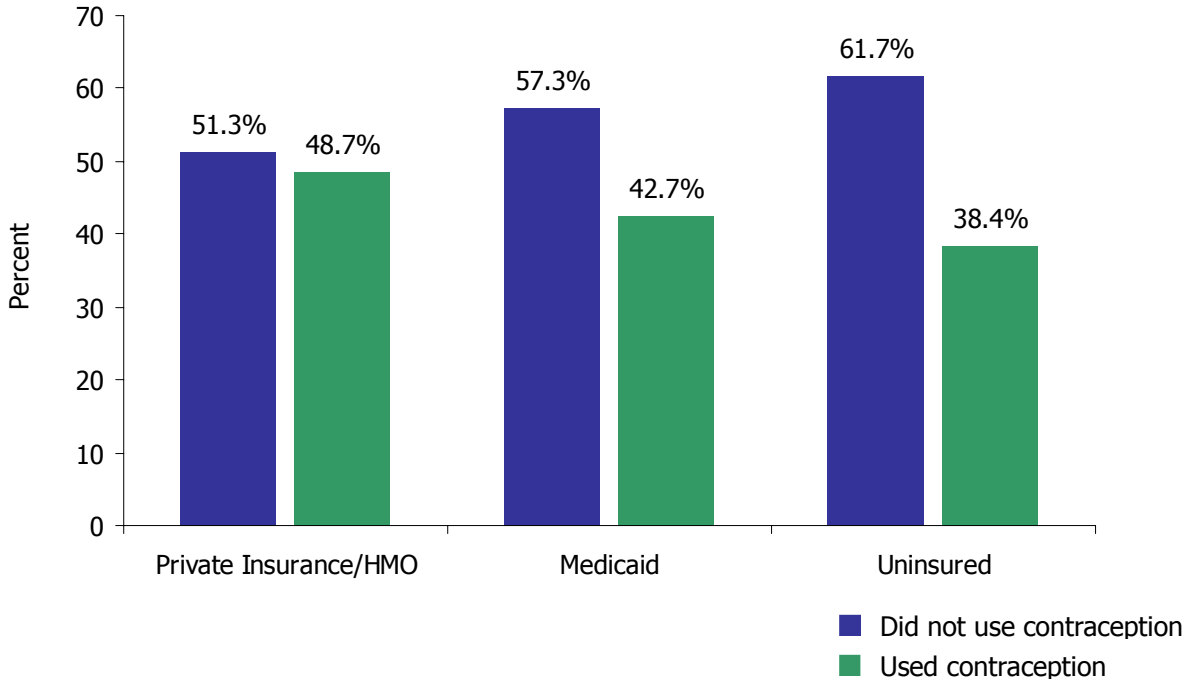
Prevalence of contraceptive use prior to pregnancy by maternal education, 2003 MI PRAMS



Contraception

Figure 17:

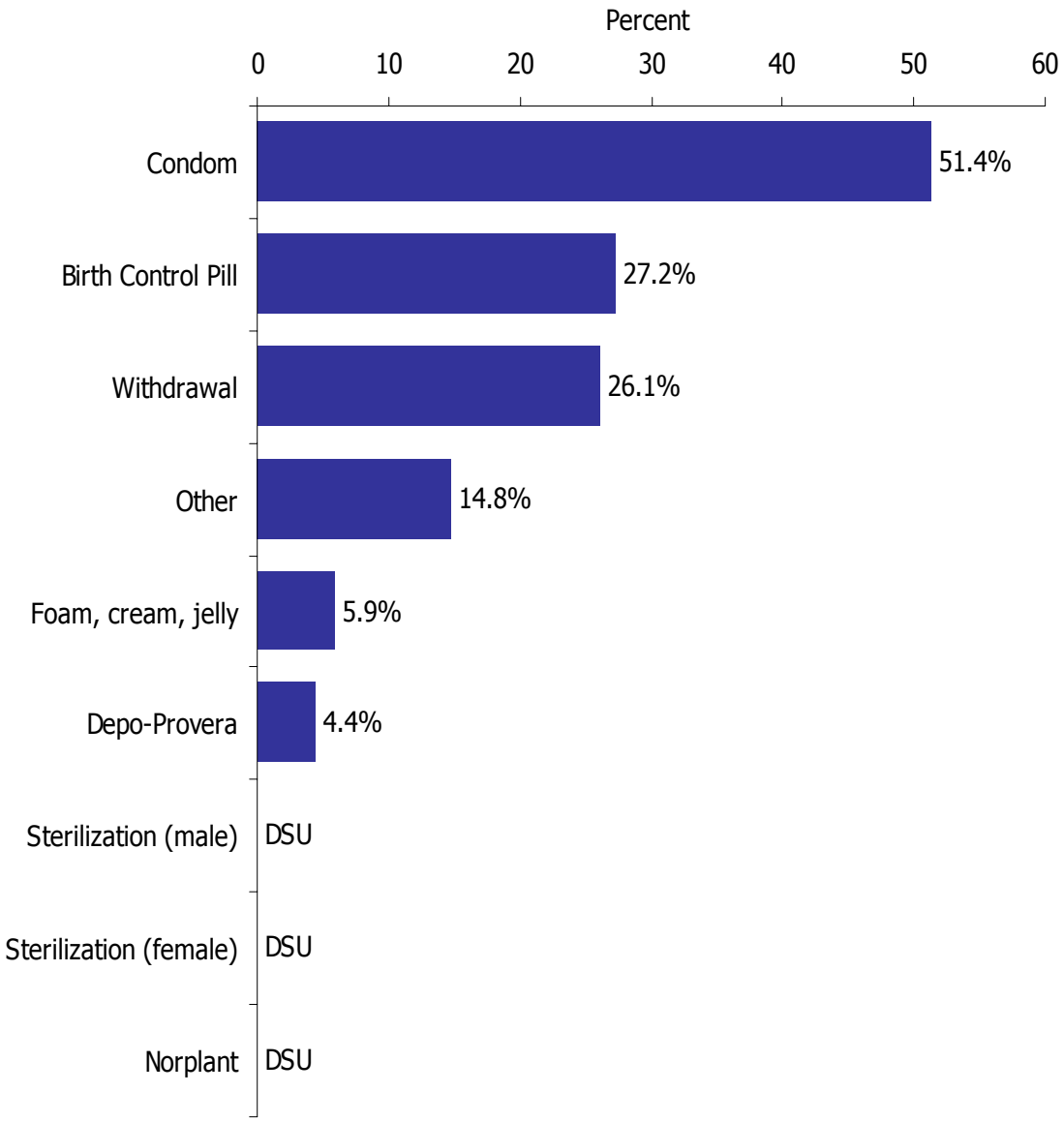
Prevalence of contraceptive use prior to pregnancy by insurance status, 2003 MI PRAMS



Contraception

Figure 18:

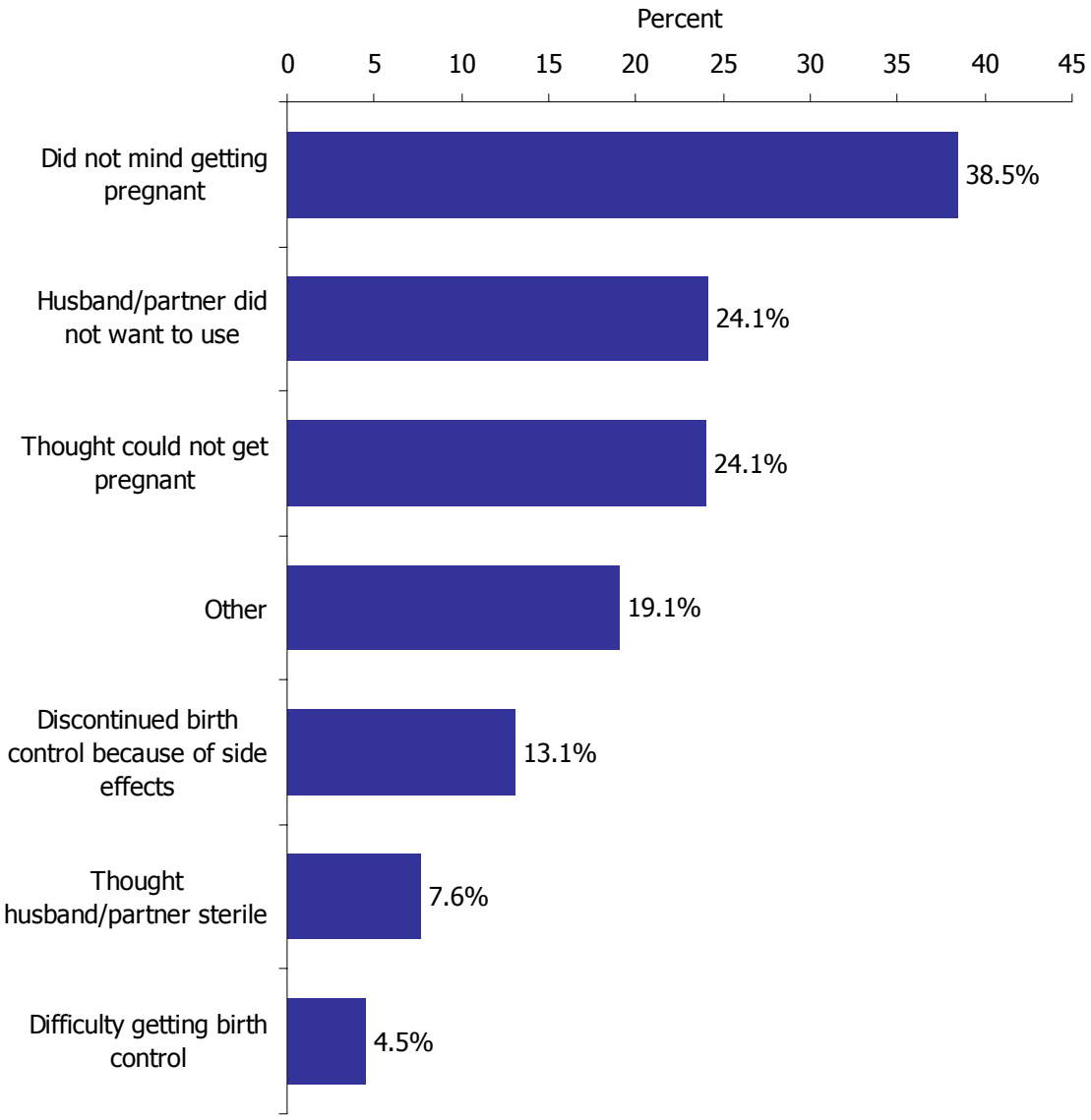
Method of contraception among women who indicated using contraception prior to pregnancy, 2003 MI PRAMS



Contraception

Figure 19:

Reasons for not using a contraceptive method prior to pregnancy,
2003 MI PRAMS



Contraception

Figure 20:

Prevalence of contraception use during the postpartum period

2003 MI PRAMS

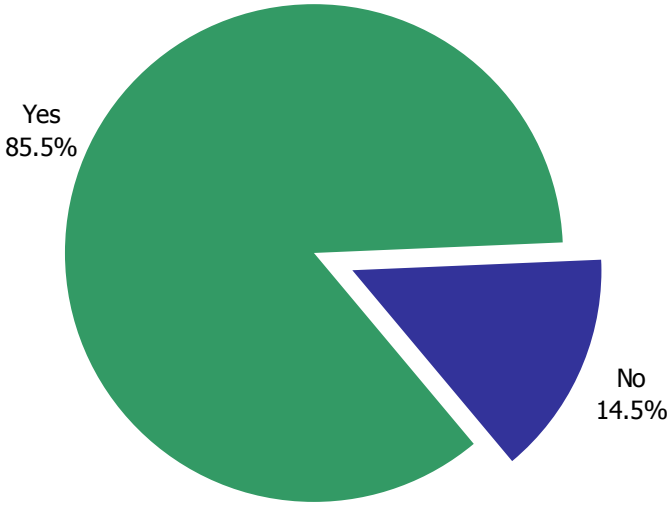
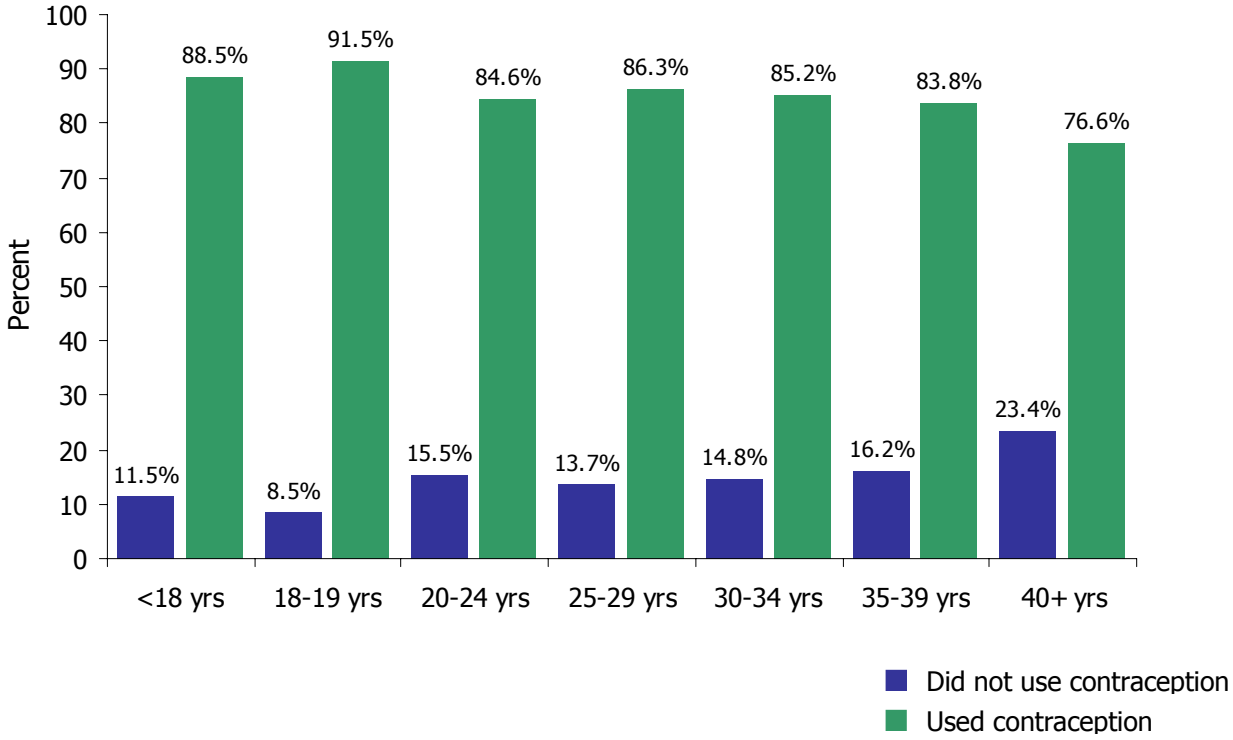


Figure 21:

Prevalence of contraception use during the postpartum period by maternal age,

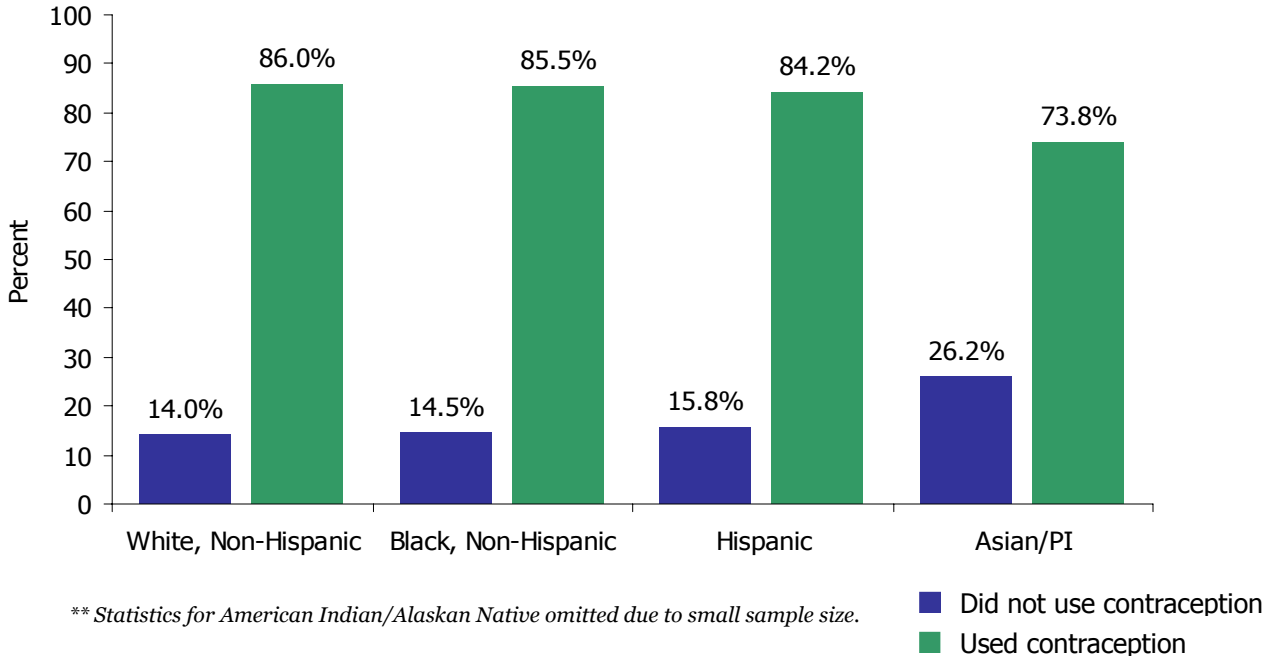
2003 MI PRAMS



Contraception

Figure 22:

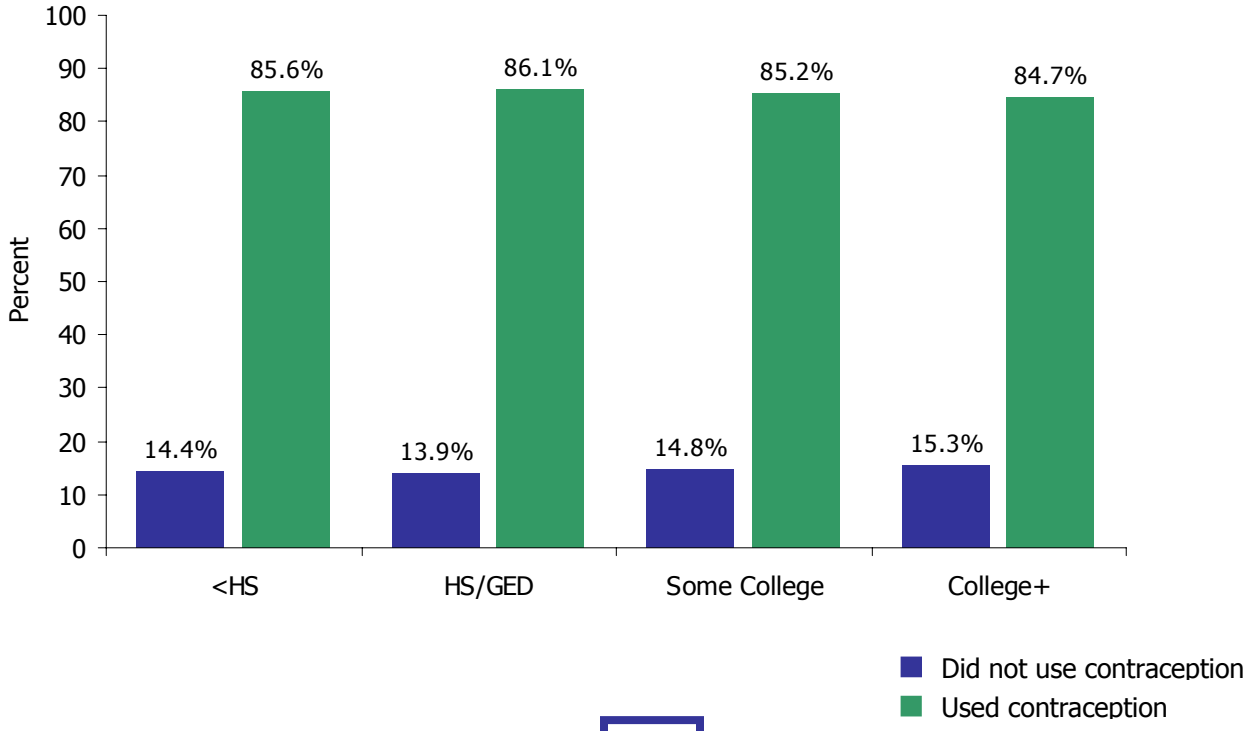
Prevalence of contraception use during the postpartum period by maternal race/ethnicity, 2003 MI PRAMS



*** Statistics for American Indian/Alaskan Native omitted due to small sample size.*

Figure 23:

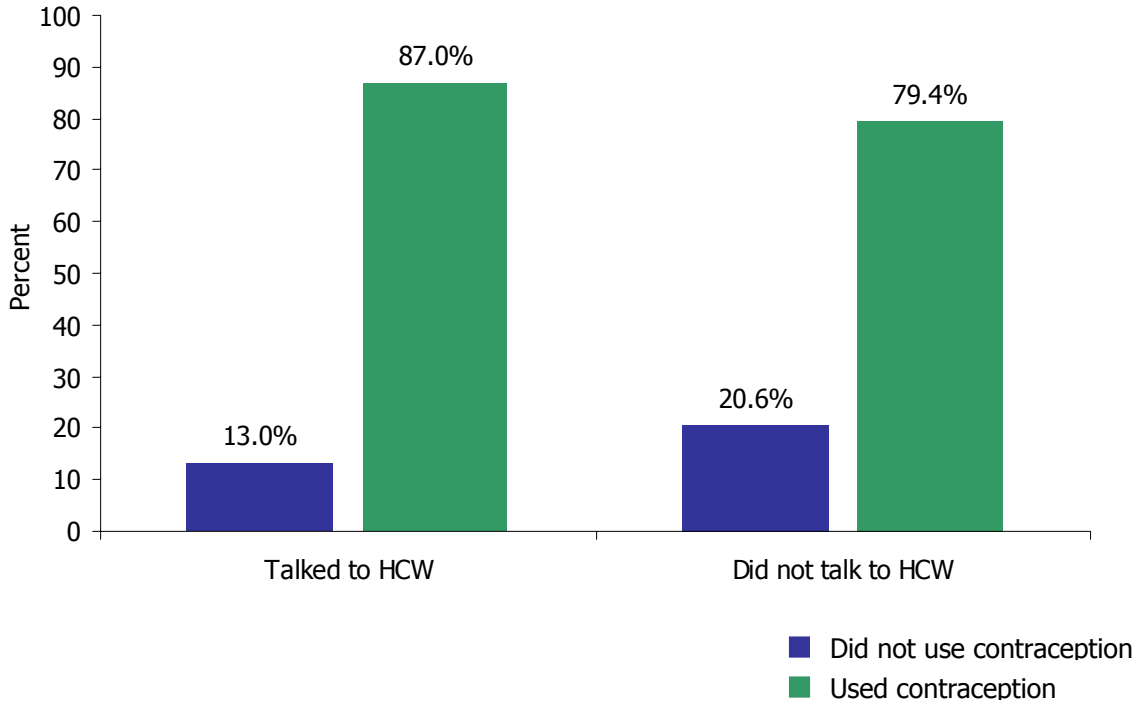
Prevalence of contraception use during the postpartum period by maternal education, 2003 MI PRAMS



Contraception

Figure 24:

Use of contraception during postpartum by discussion with health care professional during prenatal care, 2003 MI PRAMS

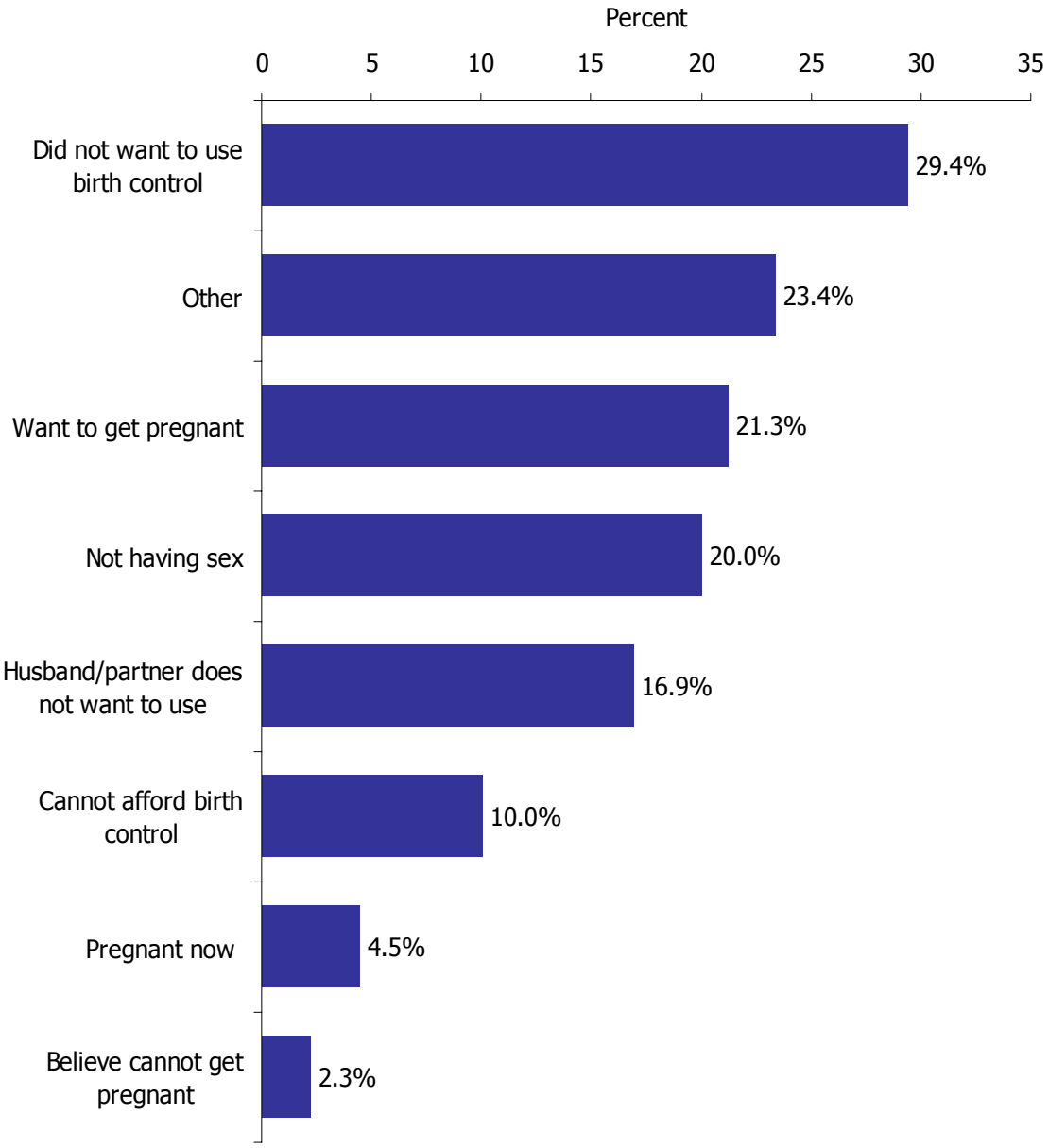


Contraception

Figure 25:

Reasons for not using a contraceptive method postpartum

2003 MI PRAMS



Low Birthweight

Definition:

Information on infants' birthweight was derived from information on the birth certificate included in the PRAMS dataset. Infants were classified as 'low birthweight' if they weighed less than 2500 grams (5.51 lbs.) at birth and normal birthweight if they weighed 2500 grams or more. Low birthweight infants were further subdivided into very low birthweight (weight <1500 grams or 3.31 lbs. at birth) or moderately low birthweight (weight=1500-2499 grams or 3.31-5.51 lbs at birth).

Results:

Among the 126,972 live infants born in 2003 (PRAMS estimate), 7.3% weighed less than 2500 grams (low birthweight) with 81.7% of them being moderately low birthweight (1,500-2,499 grams) and 18.4% very low birthweight infants (below 1,500 grams) (Figure #26). The prevalence of low birthweight varied by maternal characteristics. When stratified by maternal age, women older than 40 experienced the highest rate of low birthweight infants (11.0%) followed by the age group 18-19 years old (10.0%). Women 25-29 and 30-34 years of age had the lowest rates of low birthweight infants (6.0% and 6.1%, respectively) (Figure #27). The prevalence of low birthweight was highest among Non-Hispanic Blacks (13.5%), followed by Non-Hispanic Whites (6.2%), Hispanics (4.5%) and Asian/Pacific Islanders (4.1%) (Figure #28). As the educational status of women decreases, the prevalence rate of low birthweight increases, with the lowest rate of low birthweight infants (5.5%) in women with at least a college degree (Figure #29). When stratified by insurance status, Medicaid recipients experienced a higher prevalence of low birthweight infants (11.0%) compared to women with private coverage (6.2%) (Figure #30). It is important to note that 71.5% of low birthweight infants were preterm (Figure #31).

Other known risk factors for having a low birthweight infant were analyzed, such as pregnancy intention and smoking status. Women who had an unintended pregnancy had a higher prevalence rate of low birthweight infants than women with an intended pregnancy (8.2% versus 6.5%, respectively) (Figure #32). Women who reported smoking during pregnancy had an almost two times higher rate of low birthweight infants (11.1%) when compared to non-smokers (6.5%) (Figure #33).

Public Health Implications:

Younger women (below 20 years of age) or over the age of forty, those with less than a HS diploma/GED, women participating in Medicaid, Non-Hispanic Blacks, women with an unintended pregnancy and women who smoked during pregnancy remain at risk for delivering a low birthweight infant. Almost three of four infants (over 70%) born with low birthweight were also preterm. Consequently, efforts targeted to prevent early labor and preterm birth through counseling about the risks for preterm birth may have a considerable impact on the number of preterm and low birthweight births.

Reference Tables: #11- #14

Low Birthweight

Figure 26:

Prevalence of infant birthweight and types of low birthweight,
2003 MI PRAMS

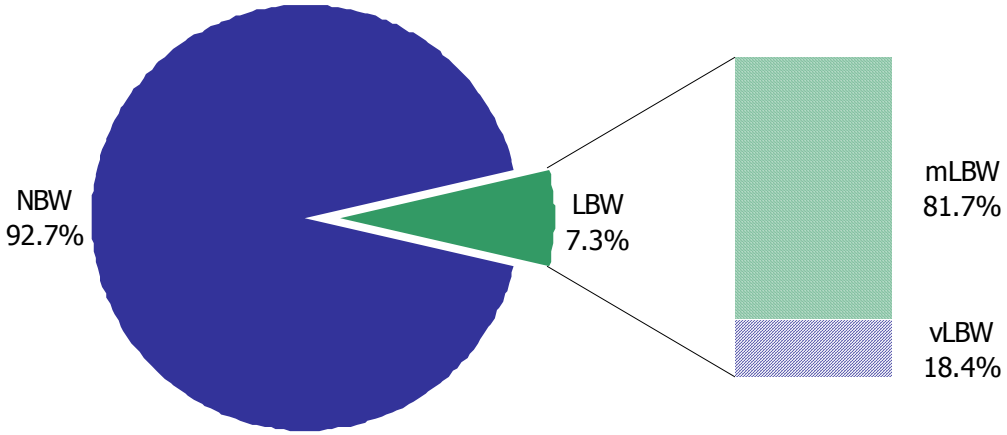
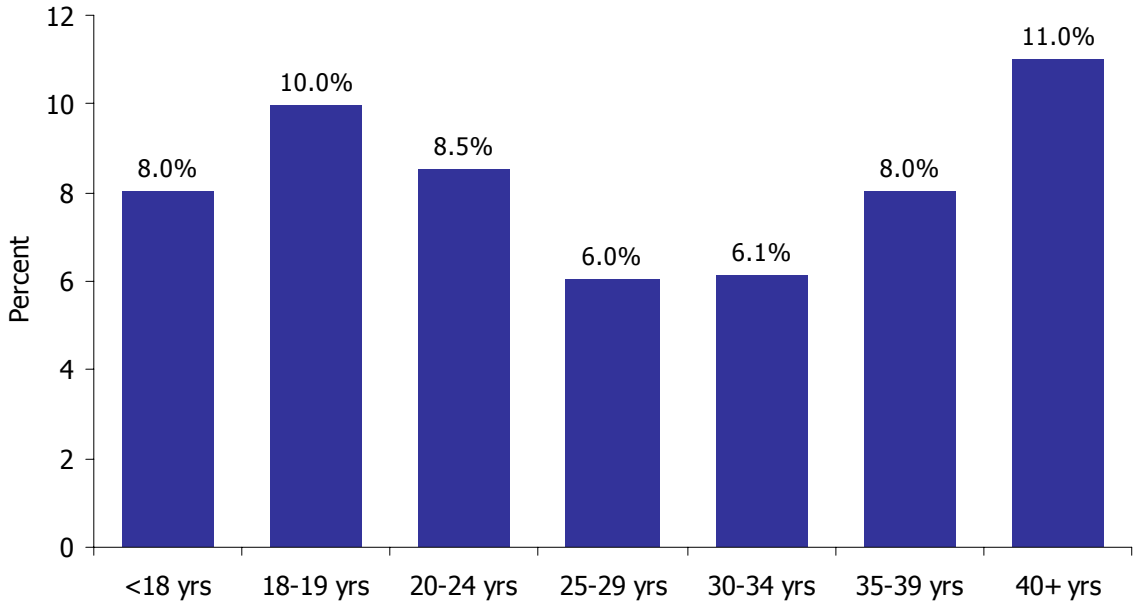


Figure 27:

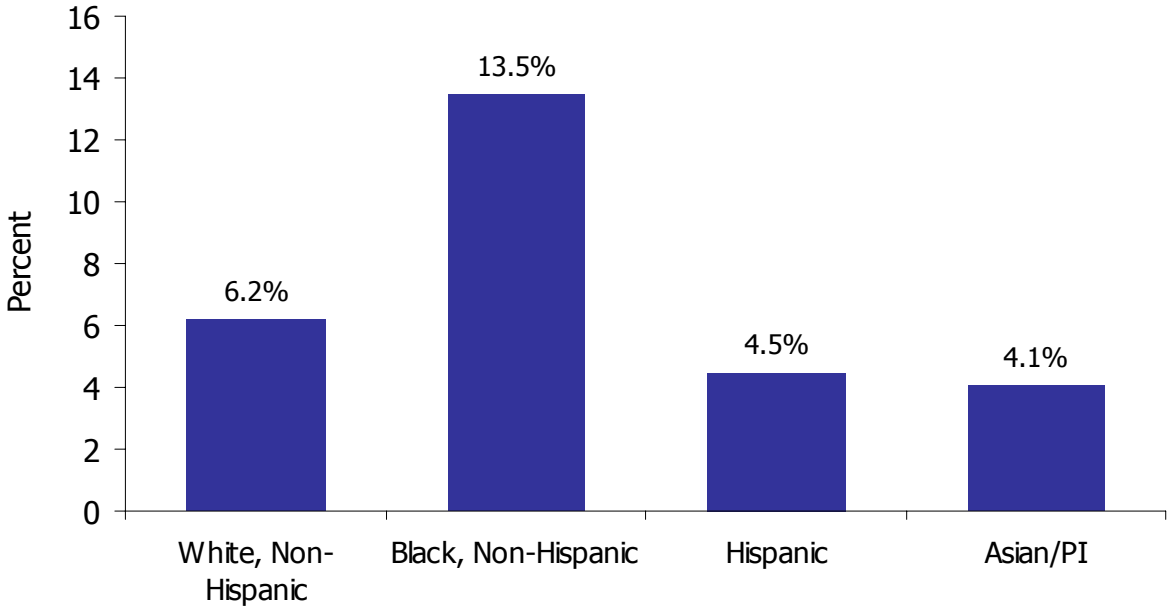
Prevalence of low birthweight by maternal age,
2003 MI PRAMS

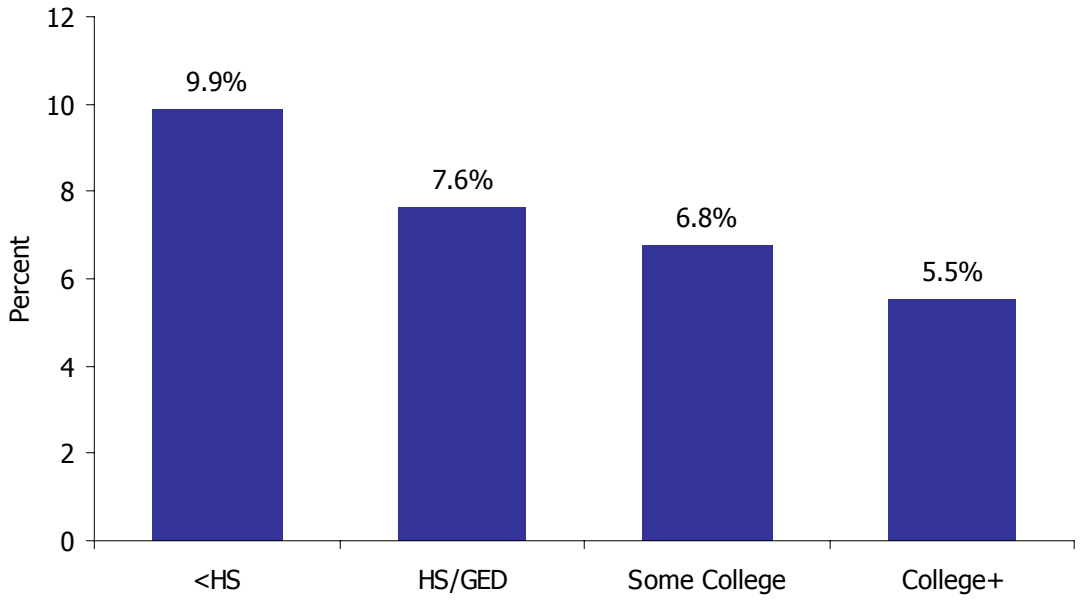


Low Birthweight

Figure 28:

Prevalence of low birthweight by maternal race/ethnicity, 2003 MI PRAMS





Low Birthweight

Figure 30:

Prevalence of low birthweight by maternal pre-pregnancy insurance status, 2003 MI PRAMS

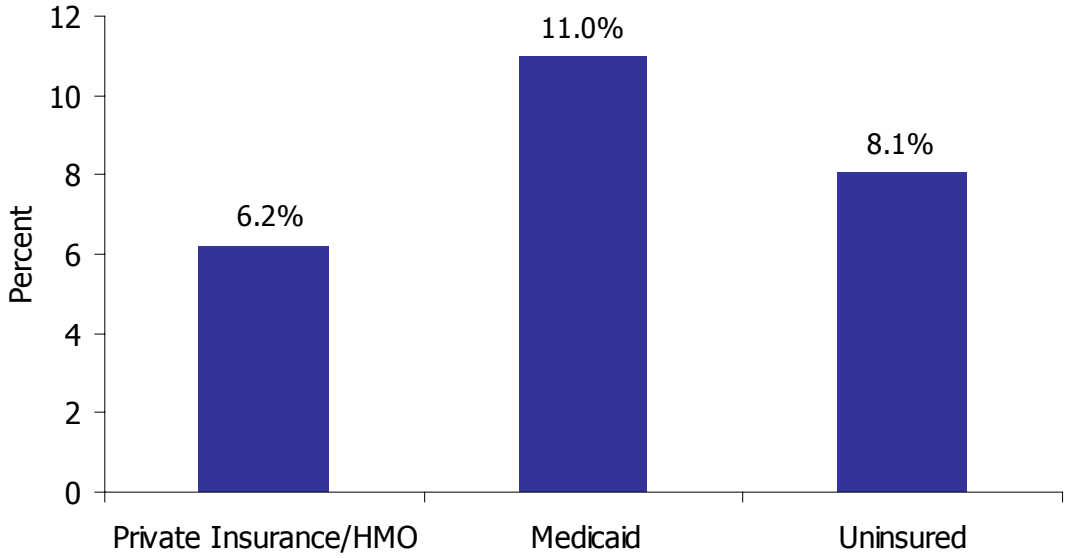
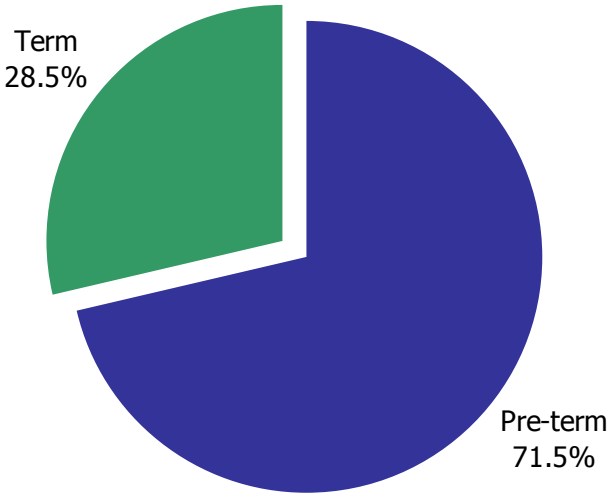


Figure 31:

Prevalence of low birthweight by gestational age, 2003 MI PRAMS



Low Birthweight

Figure 32:

Prevalence of low birthweight by pregnancy intention

2003 MI PRAMS

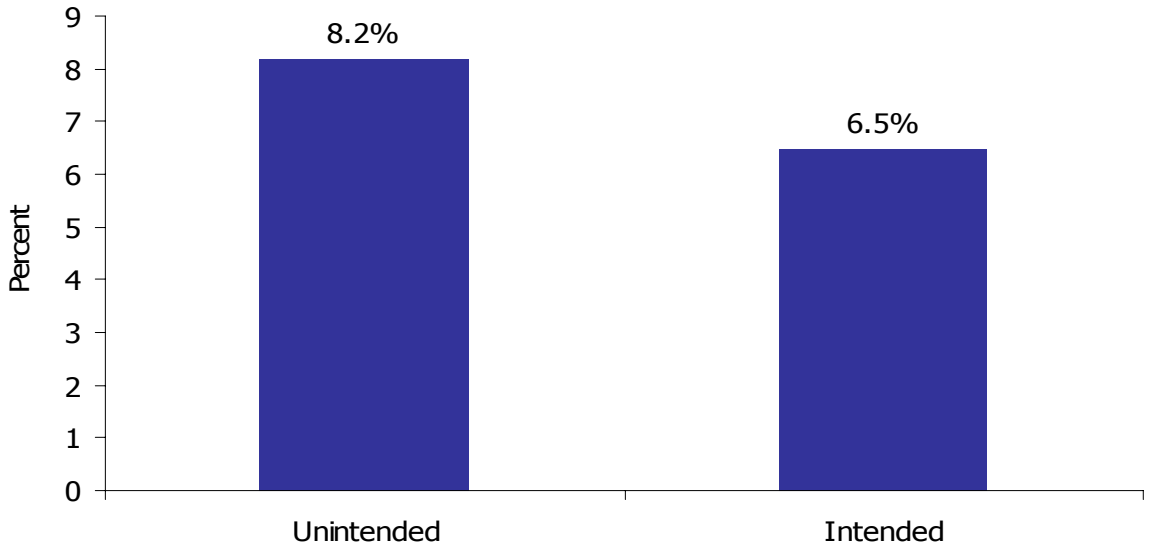
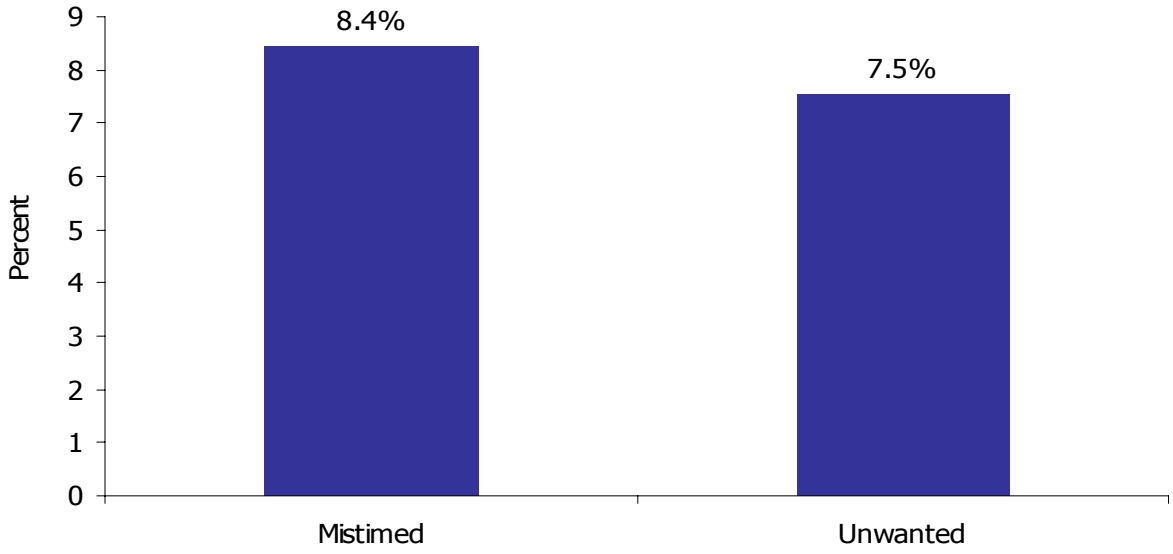


Figure 33:

Prevalence of low birthweight by pregnancy intention type,

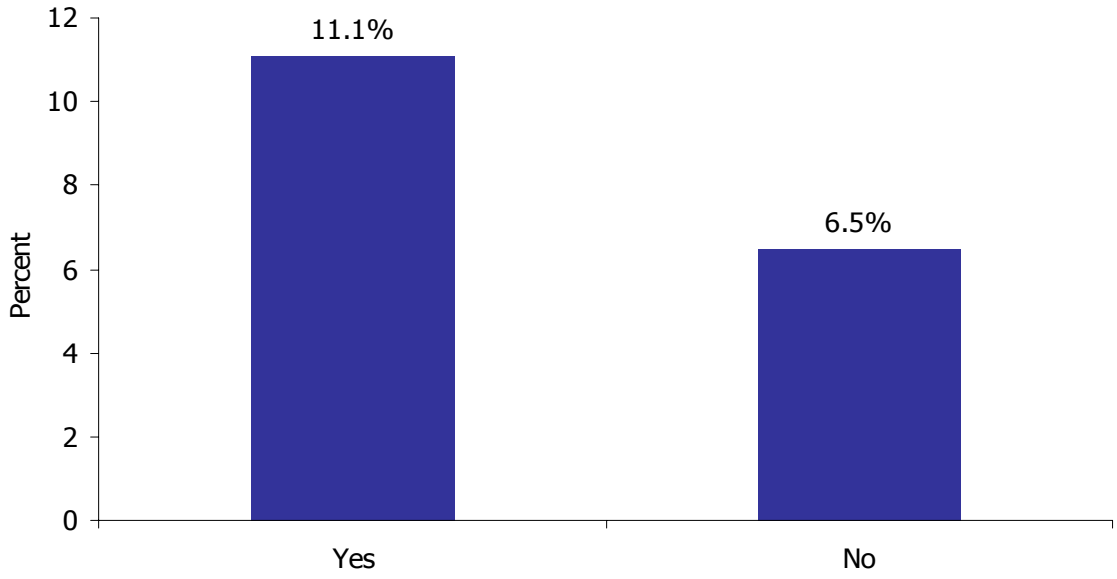
2003 MI PRAMS



Low Birthweight

Figure 34:

Prevalence of low birthweight by smoking status during pregnancy, 2003 MI PRAMS



Prenatal Care

Definition:

Several questions in the PRAMS questionnaire are devoted to the topic of prenatal care. The first question ascertains when care was initiated.

> *Question #16: How many weeks or months pregnant were you when you had your first visit for prenatal care? (Do not count a visit that was only for a pregnancy test or only for WIC [the special supplemental nutrition program for Women, Infants, and Children].)*
>
> *_weeks*
> *_months*
> *_ I did not go for prenatal care*

Women who indicated that they entered prenatal care (PNC) by the twelfth week (by the end of the third month) of their pregnancy were coded as initiating care in the first trimester. Those who entered care between the thirteenth and twenty-fourth week (fourth through sixth month) of their pregnancy were coded as entering care in the second trimester. Women entering PNC after their twenty-fourth week (seventh month) entered care in their third trimester. Women who were coded as having 'No PNC' indicated they did not go for prenatal care during their pregnancy. Women surveyed for PRAMS were also asked about their satisfaction with the time they entered care.

> *Question #17: Did you get prenatal care as early in your pregnancy as you wanted?*
>
> *_No*
> *_Yes*
> *_I did not want prenatal care*

Women who responded 'No' were said to have entered care later than they desired and those who answered 'Yes' as early as they desired. Those women who entered PNC after their first trimester and who entered later than they desired were asked to identify barriers they felt prevented them from obtaining care when they desired.

> *Question #18: Did any of these things keep you from getting prenatal care as early as you wanted?*
>
> *_I couldn't get an appointment earlier in my pregnancy*
> *_I didn't have enough money or insurance to pay for my visits*
> *_I didn't know I was pregnant*
> *_I had no way to get to the clinic or doctor's office*
> *_The doctor or my health plan would not start care earlier*
> *_I didn't have my Medicaid card*
> *_I had no one to take care of my children*
> *_I had too many other things going on*
> *_Other*

Information on prenatal care provider and method of payment for care, among women who obtained care, was gleaned from responses to questions #19 and #20:

Question #19: Where did you go most of the time for your prenatal care visits? (Do not count visits for WIC).

_Hospital clinic
_Health department clinic
_Private doctor's office or HMO clinic
_Other

Question# 20: How was your prenatal care paid for?

_Medicaid or Medicaid HMO
_Personal Income (cash, check, or credit card)
_Health insurance or HMO
_Other

Information regarding health education during prenatal care visits was derived from question #21, which asked women to indicate the topics they discussed with a healthcare professional during any of their visits.

Question #21: During any of your prenatal care visits, did a doctor, nurse, or health care worker talk with you about any of the things listed below? (Please count only discussions, not reading materials or videos)

_How smoking during pregnancy could affect your baby
_Breastfeeding your baby
_How drinking alcohol during pregnancy could affect your baby
_Using a seatbelt during your pregnancy
_Birth control methods to use after your pregnancy
_Medicines that are safe to take during your pregnancy
_How using illegal drugs could affect your baby
_Doing tests to screen for birth defects or diseases that run in your family
_What to do if your labor starts early
_Getting your blood tested for HIV (the virus that causes AIDS)
_Physical abuse to women by their husbands or partners

Results:

In 2003, approximately 80.2% of Michigan women reported entering prenatal care during the first trimester (Figure #35). The rate of first trimester entry into prenatal care was less than 75% for women who were younger then 25 years of age (Figure #36). Hispanic and Black, Non-Hispanic women were the most likely to enter prenatal care after the first trimester when compared to White, Non-Hispanic and Asian/Pacific Islander women (Figure #37). Entry into prenatal care during the first trimester was directly related to maternal education, with women with at least college educations having the highest rate (93.1%) of first trimester prenatal care entry compared to women with less than a high school diploma who had the lowest rate (57.7%) (Figure #38). Furthermore, women without insurance prior to pregnancy or who were Medicaid recipients had lower rates of first trimester prenatal care entry (63.0% and 64.1%, respectively) when compared to women with private insurance (89.0%) (Figure #39). Women who reported an intended pregnancy indicated higher rates of first trimester prenatal care entry when compared to women with an unintended pregnancy (87.1% compared to 70.4%) (Figure #40).

The majority of women (81.7 %) were satisfied with the time of entry into prenatal care (Table #18, page B14). However, it is known that women may face barriers that can affect the time of entry into prenatal care. Among the women who entered prenatal care later than desired, 65.8%

reported one barrier to entry, 22.0% indicated two, and 7.2% indicated three barriers. The most frequently cited barriers to prenatal care were, 'could not get an earlier appointment' (37.7%), 'unaware of pregnancy' (33.8%) and 'could not pay for visits' (20.1%) (Figure #41).

The most popular provider of prenatal care was a MD/HMO office (78.2%), followed by a hospital clinic (17.4%), and health department clinic (4.4%) (Figure #42). The most common payer source for prenatal care reported by PRAMS participants was private insurance (64.1%), followed by Medicaid (38.5%), and personal income (11.8%) (Figure #43).

During prenatal care visits, healthcare professionals have the opportunity to educate and advise women about various health and pregnancy-related issues. Over 80% of women reported the following topics being discussed with them during at least one of their prenatal care visits: safe medications, screening for birth defects, early labor, HIV/AIDS testing, breastfeeding, and postpartum contraception. The least likely topics discussed during the prenatal care visits were seatbelt utilization and domestic abuse (Figure #44).

Public Health Implications:

Although the majority of pregnant women enter prenatal care early, those who enter after their first trimester are of particular concern to public health professionals. The top three reasons reported by women for entering prenatal care after the first trimester were: being unaware of their pregnancy, could not get an earlier appointment, and could not afford an appointment. Two of these reasons are related to health care access. Community-based initiatives to improve access to care can be effective in developing systems of care for women of childbearing age. Community-based educational initiatives on the early signs of and symptoms of pregnancy and benefits of early PNC need to target, in particular teenagers, Black, Non-Hispanic women, and women with less than a high school education. Continued collaboration is needed between public health professionals and medical providers to further explore and improve access to care in the first trimester for pregnant women.

The content of prenatal visits is as important as the access and thus first trimester entry into care. Not discussing important topics such as seatbelt use and domestic violence could lead to fatal consequences. About one in five maternal deaths (21%) was coded as violent, with the majority being caused by motor vehicle accidents. One of the recommendations that Michigan Maternal Mortality Surveillance (MMMS) Interdisciplinary Committee agreed upon was to develop and implement an educational project regarding the use of seatbelts during pregnancy to prevent maternal deaths associated with motor vehicle accidents. This is an example of collaboration and meaningful use of the PRAMS/MMMS findings to further improve the health of women in Michigan.

Reference Tables: #15-#23

Prenatal Care

Figure 35:

Trimester of entry into prenatal care,

2003 MI PRAMS

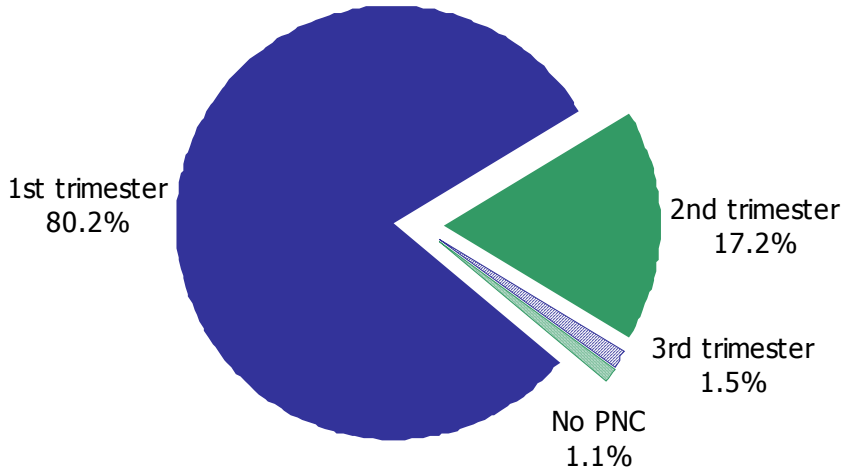
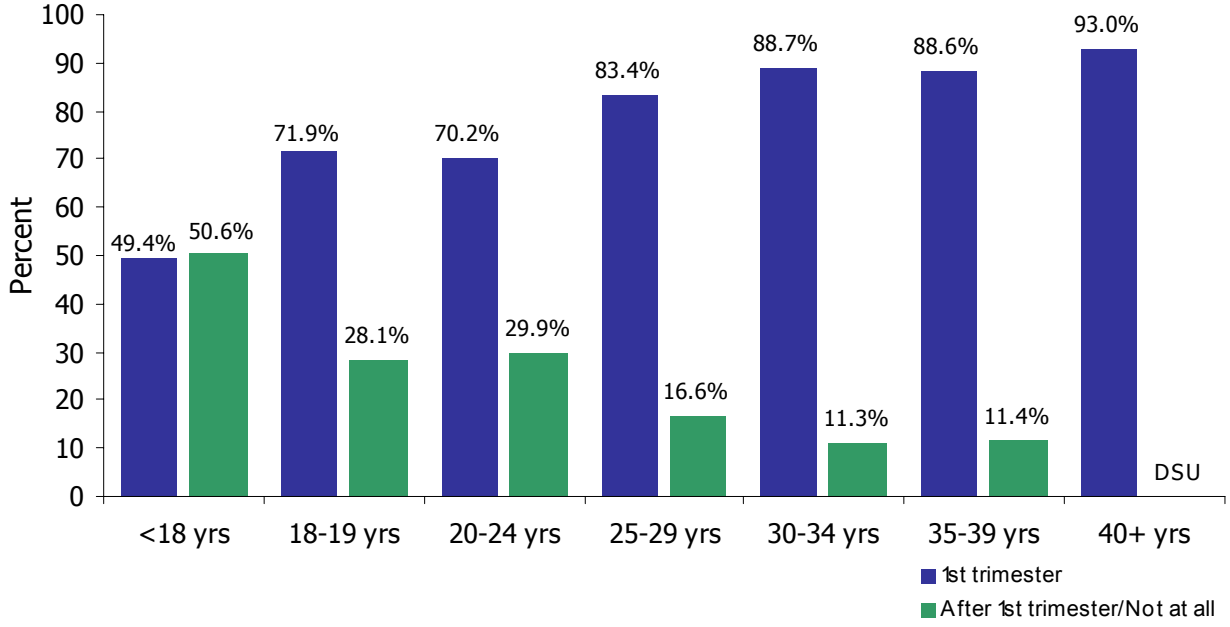


Figure 36:

Entry into prenatal care after the first trimester or not at all by maternal age,

2003 MI PRAMS

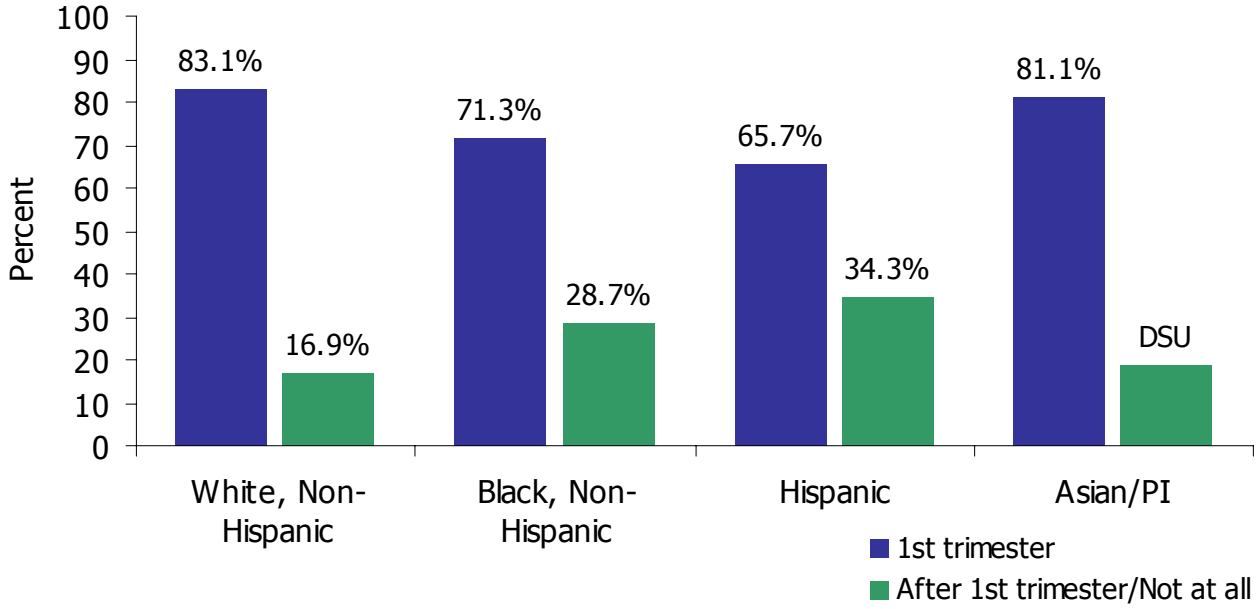


DSU: Data statistically unreliable

Prenatal Care

Figure 37:

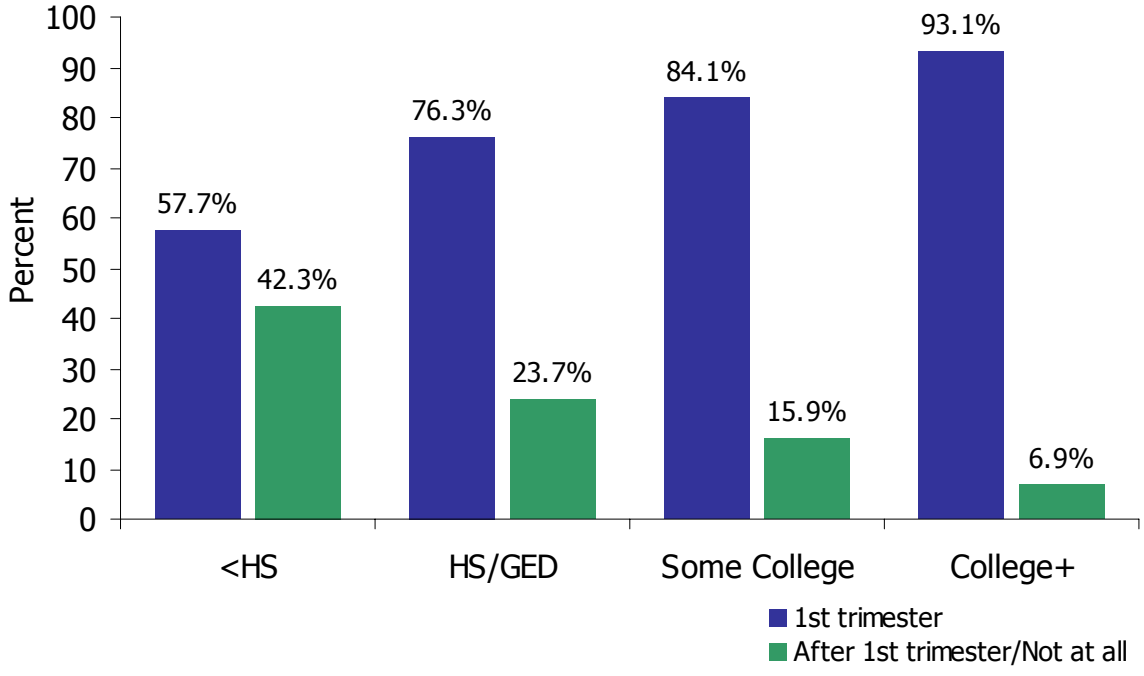
Entry into prenatal care after the first trimester or not at all by maternal race/ethnicity, 2003 MI PRAMS



*** Statistics for American Indian/Alaskan Native omitted due to small sample size.*

Figure 38:

Entry into prenatal care after the first trimester or not at all by maternal education, 2003 MI PRAMS



Prenatal Care

Figure 39:

Entry into prenatal care after the first trimester or not at all by pre-pregnancy insurance status, 2003 MI PRAMS

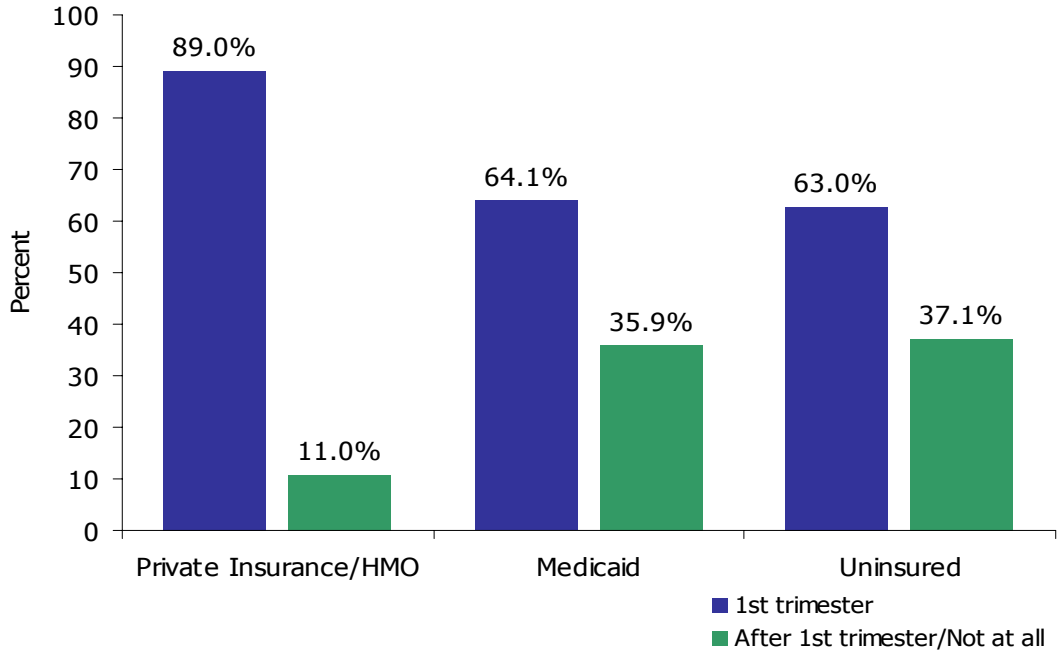
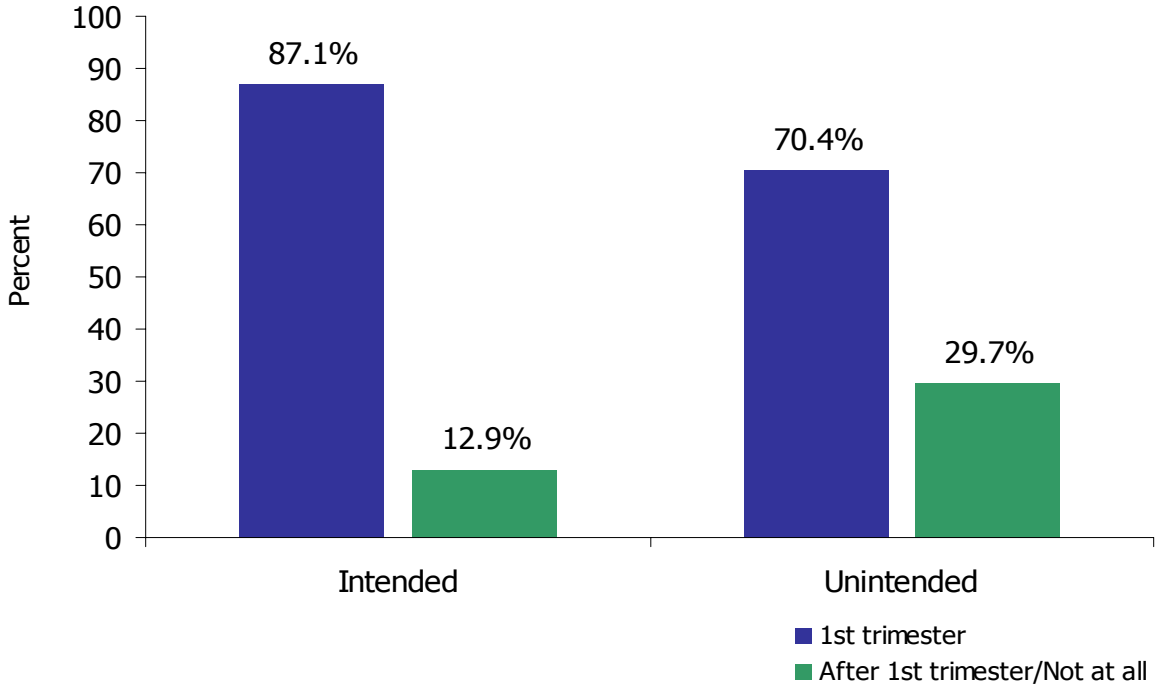


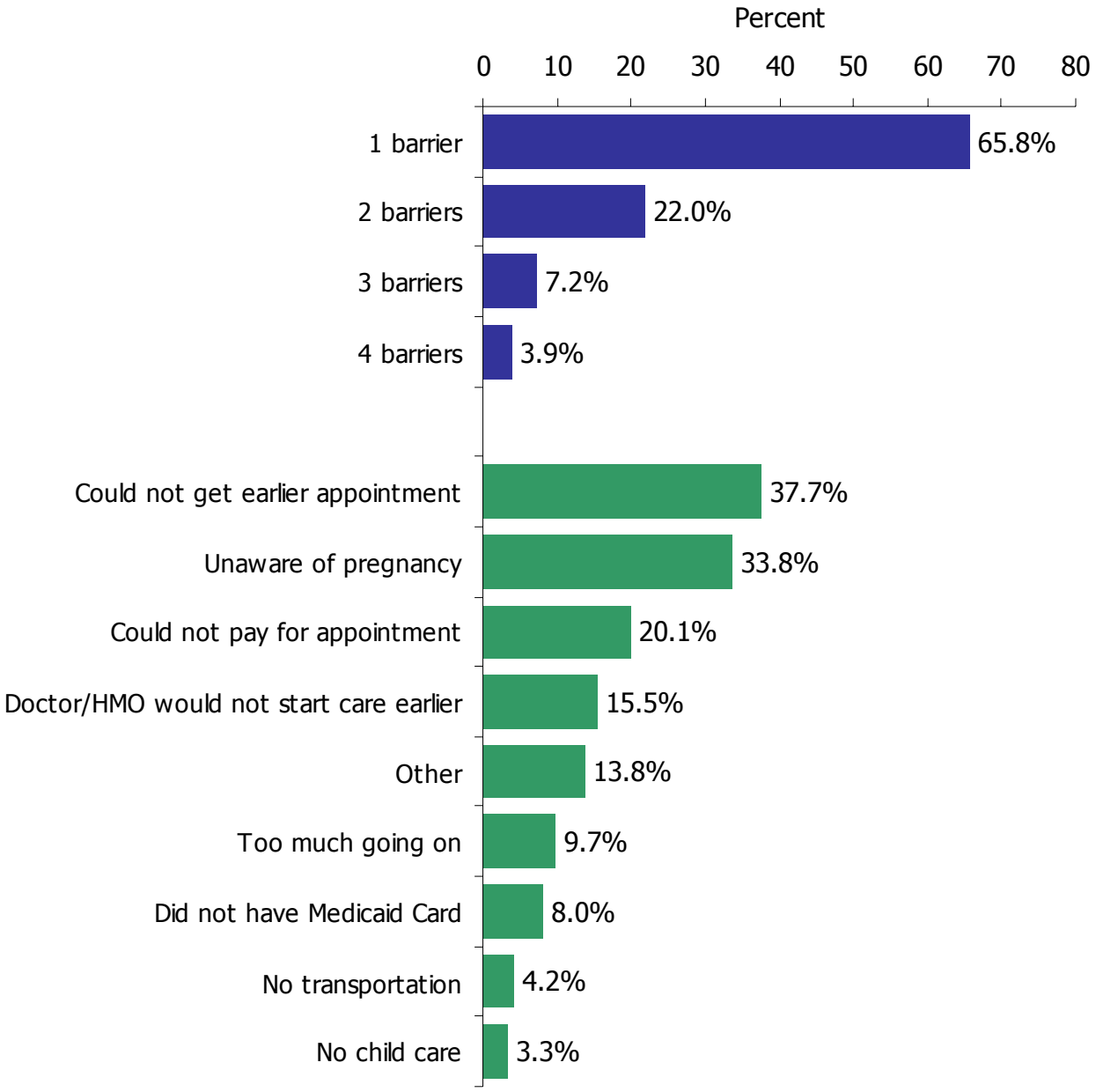
Figure 40:

Entry into prenatal care by pregnancy intention, 2003 MI PRAMS



Prenatal Care

Figure 41:
Number and type of barriers to prenatal care,
2003 MI PRAMS



Prenatal Care

Figure 42:

Prevalence of prenatal care providers,

2003 MI PRAMS

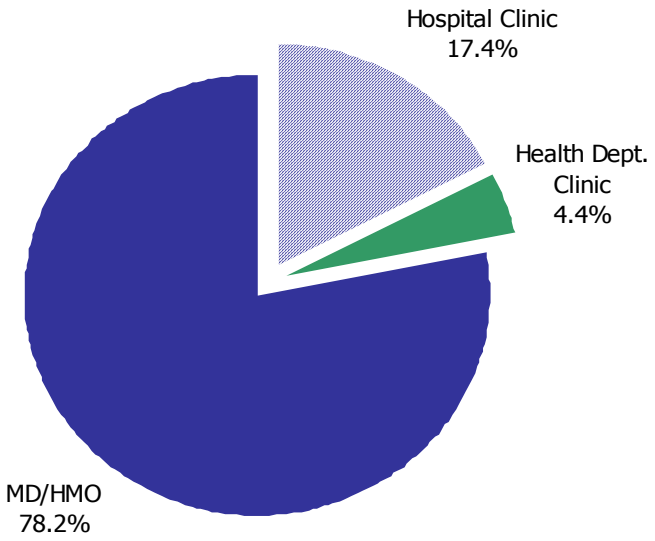
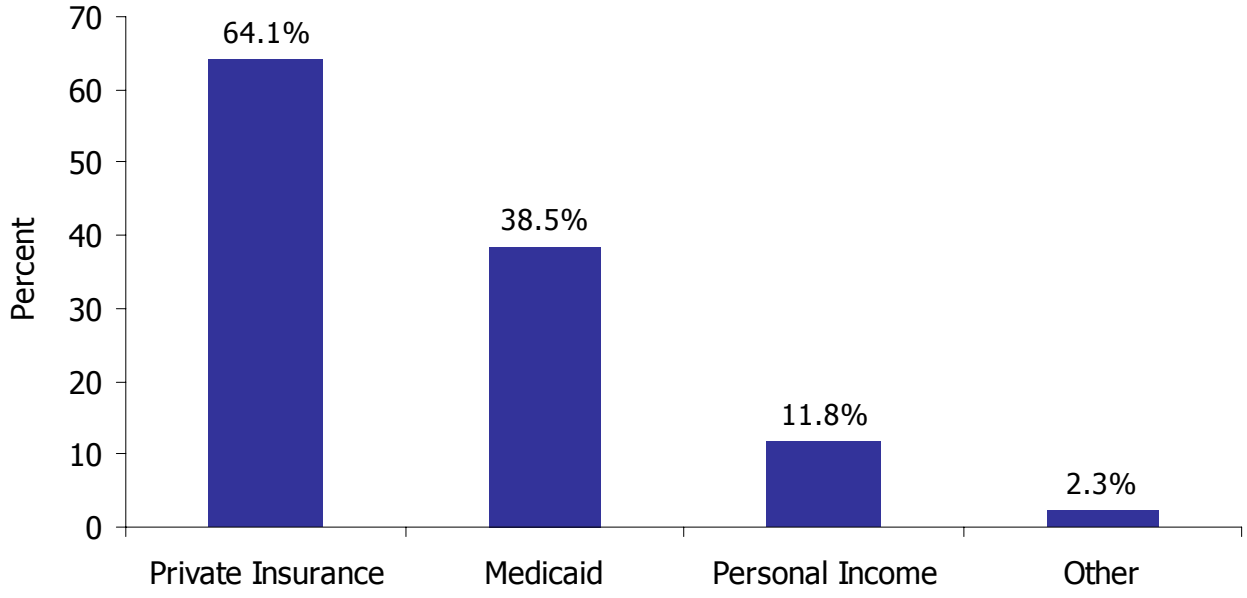


Figure 43:

Sources of payment for prenatal care,

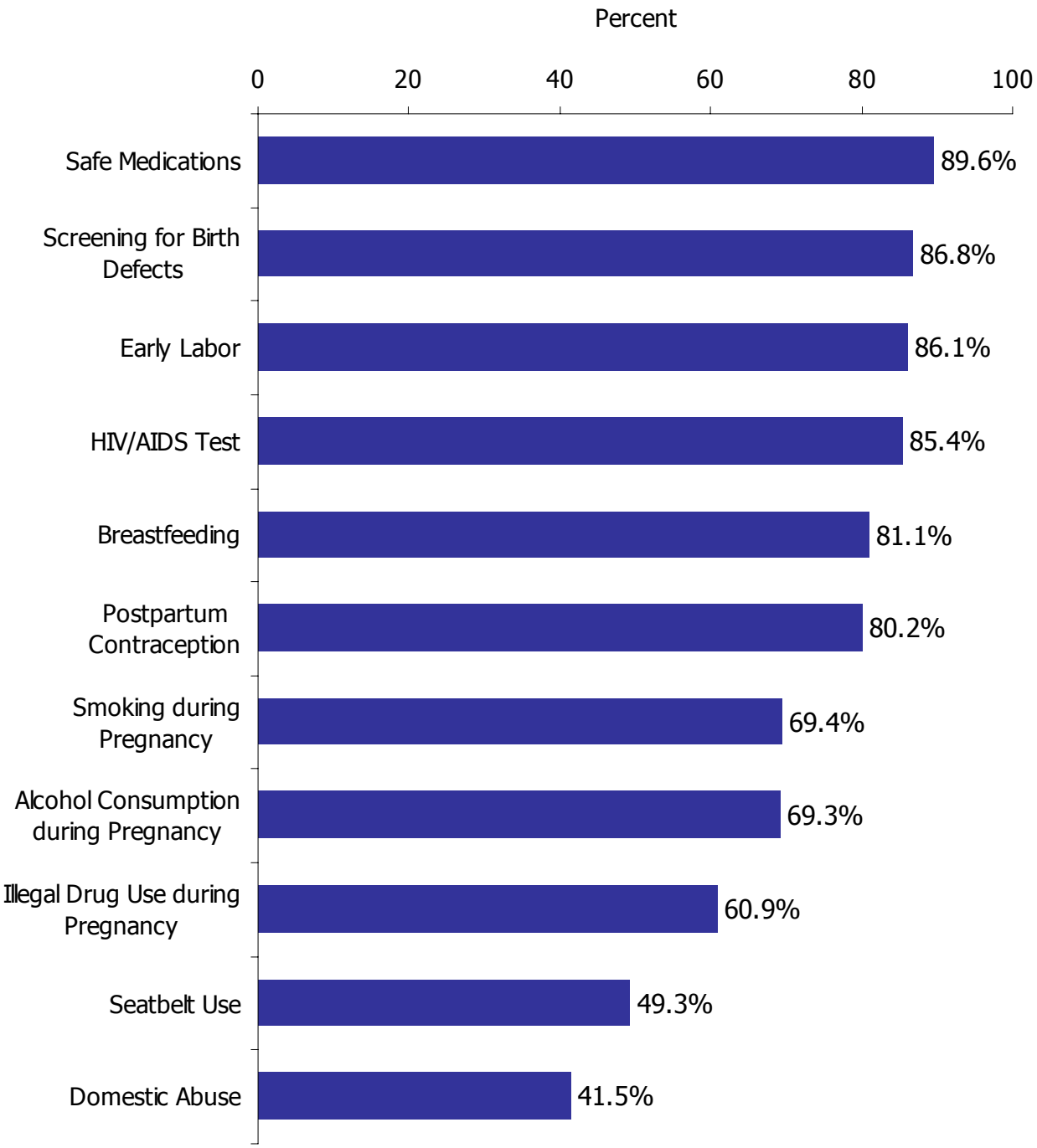
2003 MI PRAMS



Prenatal Care

Figure 44:

Topics discussed with a health care professional during prenatal care, 2003 MI PRAMS



Breastfeeding

Definition:

Seven questions in the PRAMS questionnaire address the topic of breastfeeding. The following question gathers information on breastfeeding intention:

Question #46: During your most recent pregnancy, what did you think about breastfeeding your new baby?
_I knew I would breastfeed
_I thought I might breastfeed
_I knew I would not breastfeed
_I didn't know what to do about breastfeeding

Women who responded that they knew they were going to breastfeed were considered "intending to breastfeed." Women who responded that they were not going to breastfeed were classified as "intending not to breastfeed." Women who either thought they may breastfeed or didn't know what to do about breastfeeding were classified as being "unsure about breastfeeding".

Information regarding breastfeeding initiation and duration was derived from questions #47, #49, #51, and #52.

Question #47: Did you ever breastfeed or pump breast milk to feed your new baby after delivery?
_No
_Yes

Those who answered No to question #47 were asked:

Question #48: What were your reasons for not breastfeeding your new baby?
_I had other children to take care of
_I had too many household duties
_I didn't like breastfeeding
_I didn't want to be tied down
_I was embarrassed to breastfeed
_I went back to school or work
_My husband or partner didn't want me to breastfeed
_I wanted my body back to myself
_Other

Those who answered 'Yes' to question #47 were asked:

Question #49: Are you still breastfeeding or feeding pumped breast milk to your new baby?
_No
_Yes

Those who answered No to question #49 were asked:

Question #50: What were your reasons for stopping breastfeeding?
_My baby had difficulty nursing
_Breast milk alone did not satisfy my baby
_I thought my baby was not gaining enough weight
_My baby became sick and could not breastfeed
_My nipples were sore, cracked, or bleeding
_I thought I was not producing enough milk
_I had too many household duties
_I felt it was the right time to stop breastfeeding
_I became sick and could not breastfeed
_I went back to work or school
_My husband or partner wanted me to stop breastfeeding
_Other

Question #51: How many weeks or months did you breastfeed or pump breast milk to feed your baby?
 _# weeks
 _# months
_Less than 1 week

Question #52: How old was your baby the first time you fed him or her anything besides breast milk (Include formula, baby food, juice, cow's milk, water, sugar water, or anything else you feed your baby)?
 _# weeks
 _# months
_My baby was less than a week old
_I have not fed my baby anything besides breastmilk

Results:

More than half (55.8%) of pregnant women planned on breastfeeding their infant, 18.7% thought that they may breastfeed, and 22.8% planned on not breastfeeding their infant (Figure #45). At the time surveyed (approximately four to six months postpartum), 31.4% of women were still breastfeeding their infant and 33.2% of women breastfed for greater than a week, but had stopped by the time of the survey. In addition, 31.6% of women did not breastfeed at all while the remaining 3.9% breastfed for less than a week (Figure #46).

Breastfeeding was directly correlated with maternal age and educational status. Less than 50% of women under 18 years of age reported breastfeeding, while 70% or more of women over the age of 25 years of age reported breastfeeding (Figure #47). Further, Black, Non-Hispanic women had the lowest rate with only 53.9% reporting, ever breastfeeding (Figure #48). Women with a college degree reported the highest rate of breastfeeding at 88.5%, while women without a high school diploma reported the lowest rate at 39.3% (Figure #49).

Among women who did breastfeed, only small differences in breastfeeding duration were noted when analyzed by age, except for women over 40 years of age. Women younger than 18 reported breastfeeding for 6.9 weeks, while women between 35-39 reported breastfeeding for approximately 8.6 weeks. Women over 40 had the highest duration of breastfeeding at 12.7 weeks (Figure #50). Breastfeeding duration was similar among different race/ethnic groups

with times ranging from 7.6 weeks among White/Non Hispanic women to 6.0 weeks among Hispanic women (Figure #51). In addition, women with at least a college education reported breastfeeding their infants for the longest period at 8.6 weeks, while women with a high school degree/GED breastfed for the shortest amount of time at 5.5 weeks (Figure #52). Mother did not like breastfeeding (41.5%), returning to school/work (28.3%), and needing to care for other children (26.5%) were among the most commonly stated barriers to breastfeeding among women who never breastfed (Figure #53). Other barriers include embarrassed about breastfeeding and wanted their body back. The most frequently reported barriers to breastfeeding continuation were mother thought breast milk alone did not satisfy infant (33.0%), thought she was not producing enough milk (31.9%), the infant had difficulty nursing (26.5%), and had to return to work/school (26.1%) (Figure #54). Other reasons for breastfeeding discontinuation were nipples were sore and cracked, too many household duties, and the mother felt it was time to discontinue breastfeeding.

Public Health Implications:

Prenatal care providers and health care workers should continue to engage all pregnant mothers in a discussion of the benefits of breastfeeding. Their efforts should be mainly targeted to the groups in which breastfeeding is less prevalent such as Black, Non-Hispanic, as well as women who are less than twenty and women without high school diplomas. Lactation consultants should be made available to all new mothers in the hospital to give assistance and information to help them through the first crucial days.

Almost one in five women who gave birth thought they might breastfeed, but were undecided because of the potential implications that it might have on their personal and social life. We could conclude that breastfeeding conversations throughout pregnancy, and exposure to breastfeeding in prenatal groups and other venues may help gain community acceptance for breastfeeding. Communities can promote breastfeeding-friendly workplaces, parks, day-care centers, and other facilities.

Postpartum care which supports breastfeeding should continue after the woman returns home from the hospital so that the most common identified barriers for breastfeeding can be addressed.

Reference Tables: #24- #30

Breastfeeding

Figure 45:

Pre-delivery breastfeeding planning,

2003 MI PRAMS

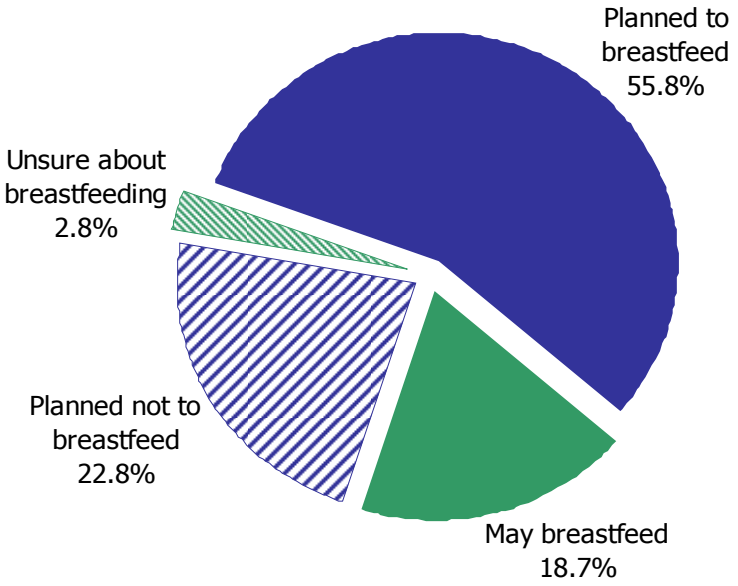
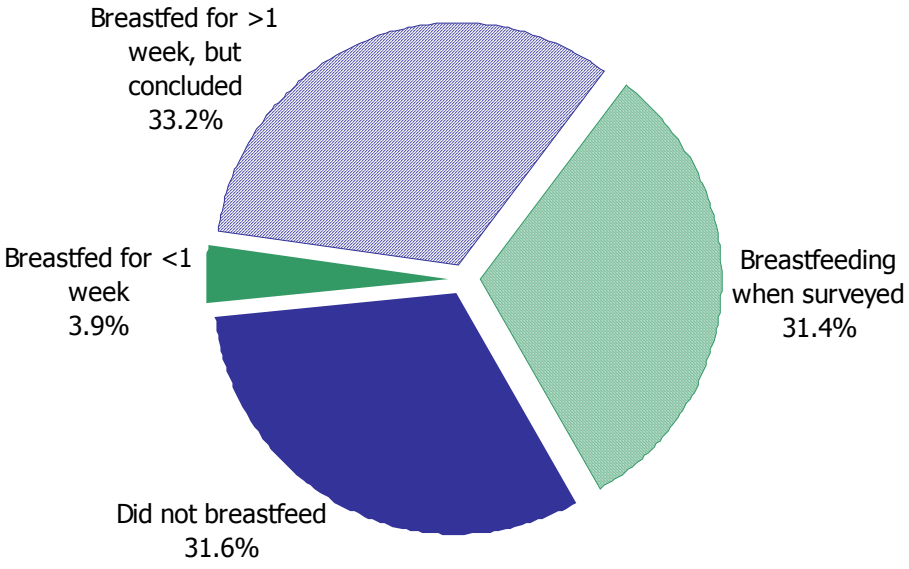


Figure 46:

Prevalence of breastfeeding behavior,

2003 MI PRAMS



Breastfeeding

Figure 47:

Prevalence of women who ever breastfed by maternal age,
2003 MI PRAMS

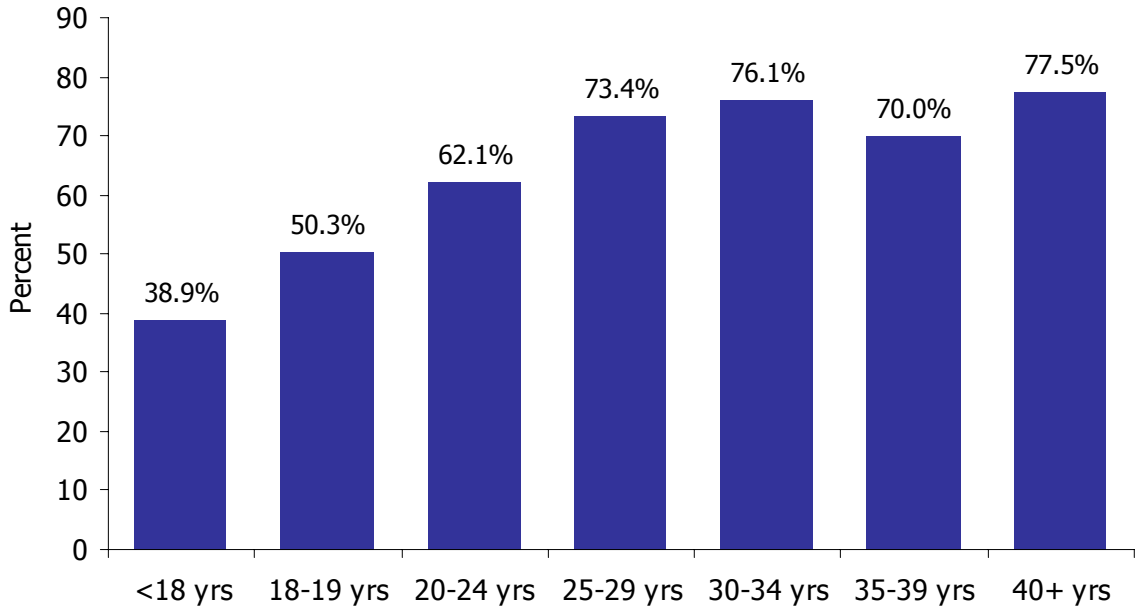
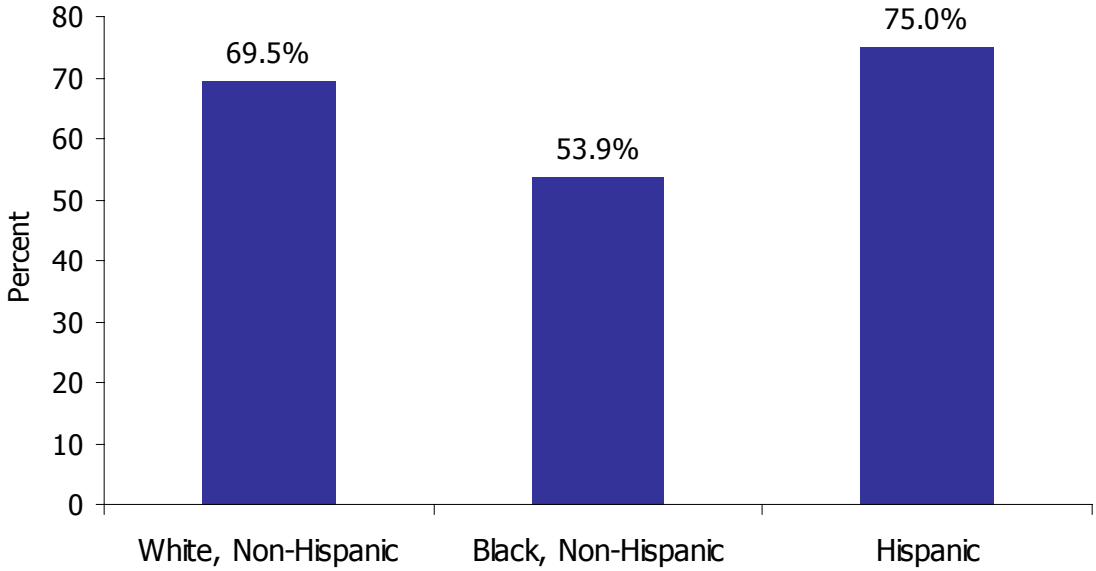


Figure 48:

Prevalence of women who ever breastfed by maternal race/ethnicity,
2003 MI PRAMS



*** Statistics for American Indian/Alaskan Native and Asian/Pacific Islander omitted due to small sample size.*

Breastfeeding

Figure 49:

Prevalence of women who ever breastfed by maternal education,

2003 MI PRAMS

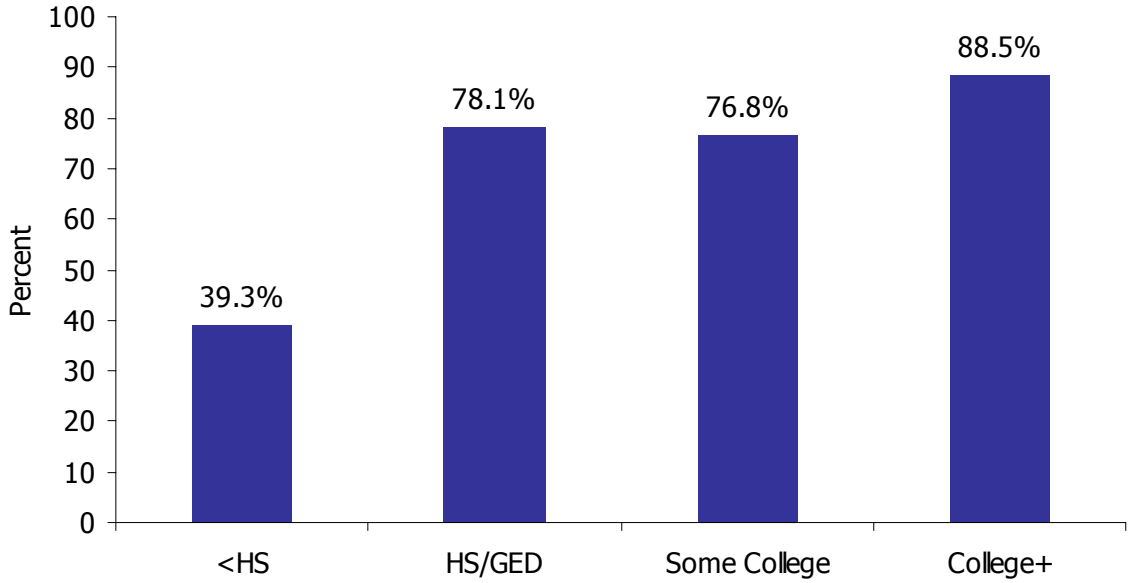
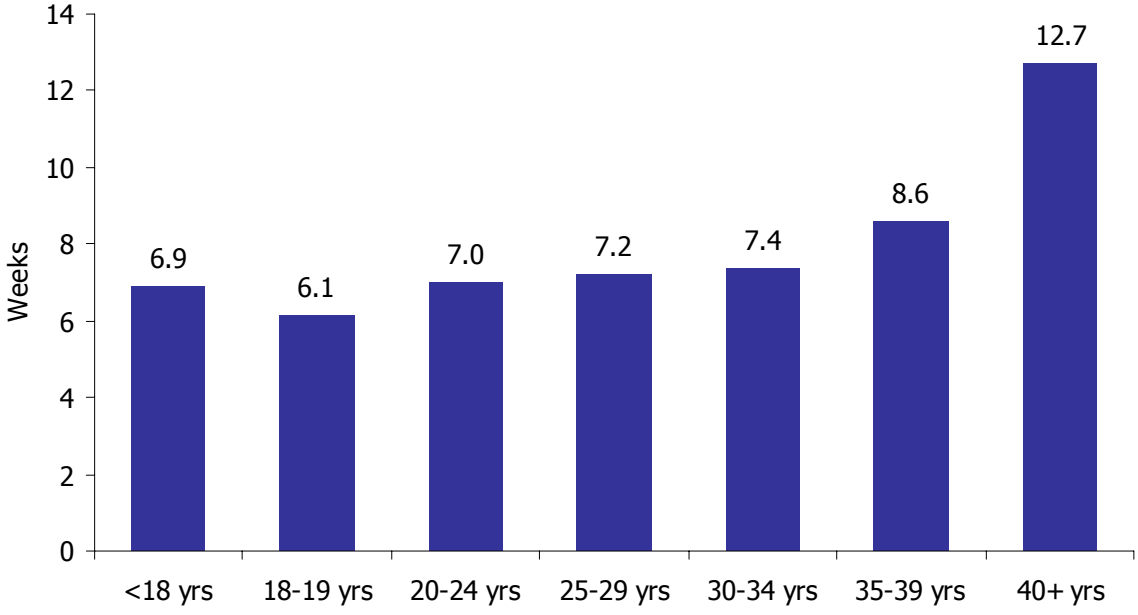


Figure 50:

Average breastfeeding duration, among women who breastfed for longer than a week, but discontinued breastfeeding before surveyed by maternal age,

2003 MI PRAMS

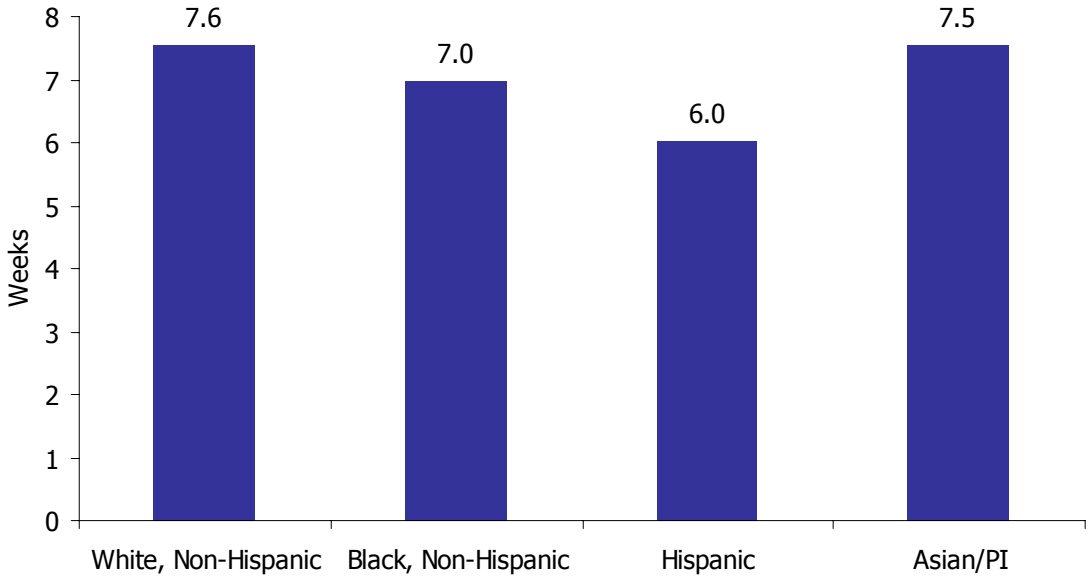


Breastfeeding

Figure 51:

Average breastfeeding duration, among women who breastfed for longer than a week, but discontinued breastfeeding before surveyed, by maternal race/ethnicity,

2003 MI PRAMS

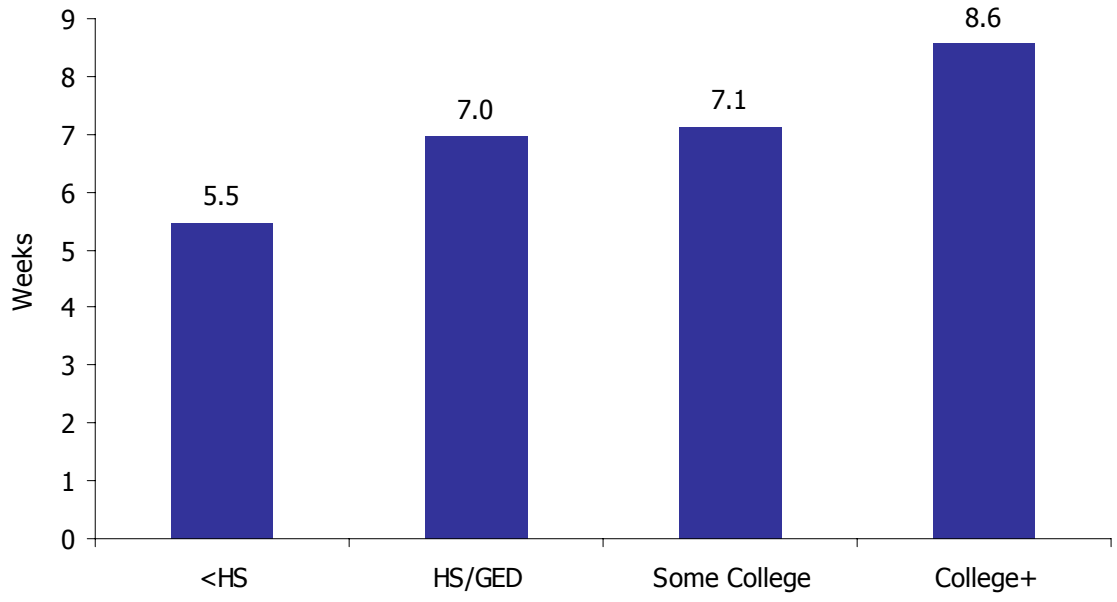


*** Statistics for American Indian/Alaskan Native omitted due to small sample size.*

Figure 52:

Average breastfeeding duration, among women who breastfed for longer than a week, but discontinued breastfeeding before surveyed, by maternal education,

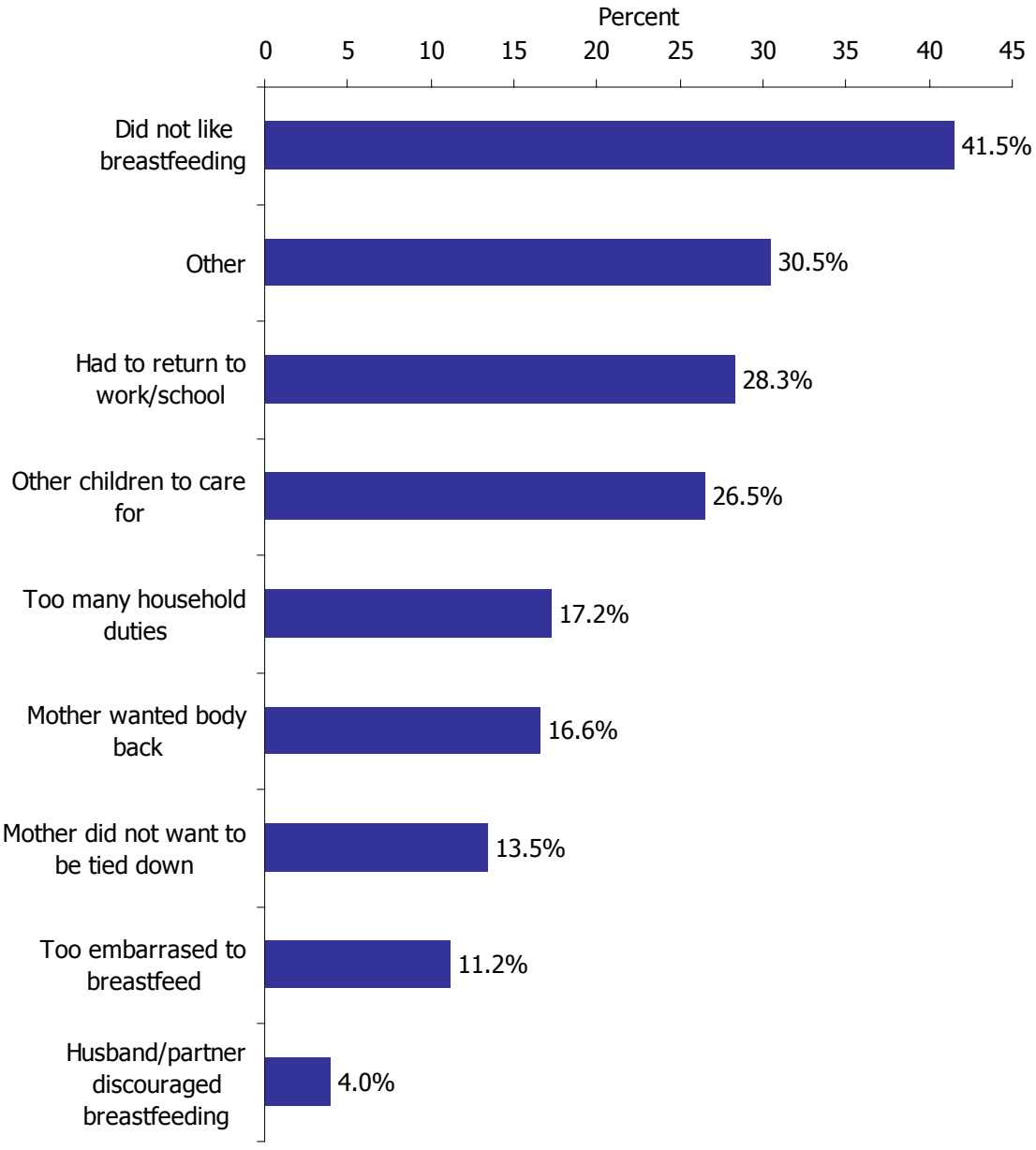
2003 MI PRAMS



Breastfeeding

Figure 53:

Barriers to breastfeeding initiation among women who never breastfed, 2003 MI PRAMS

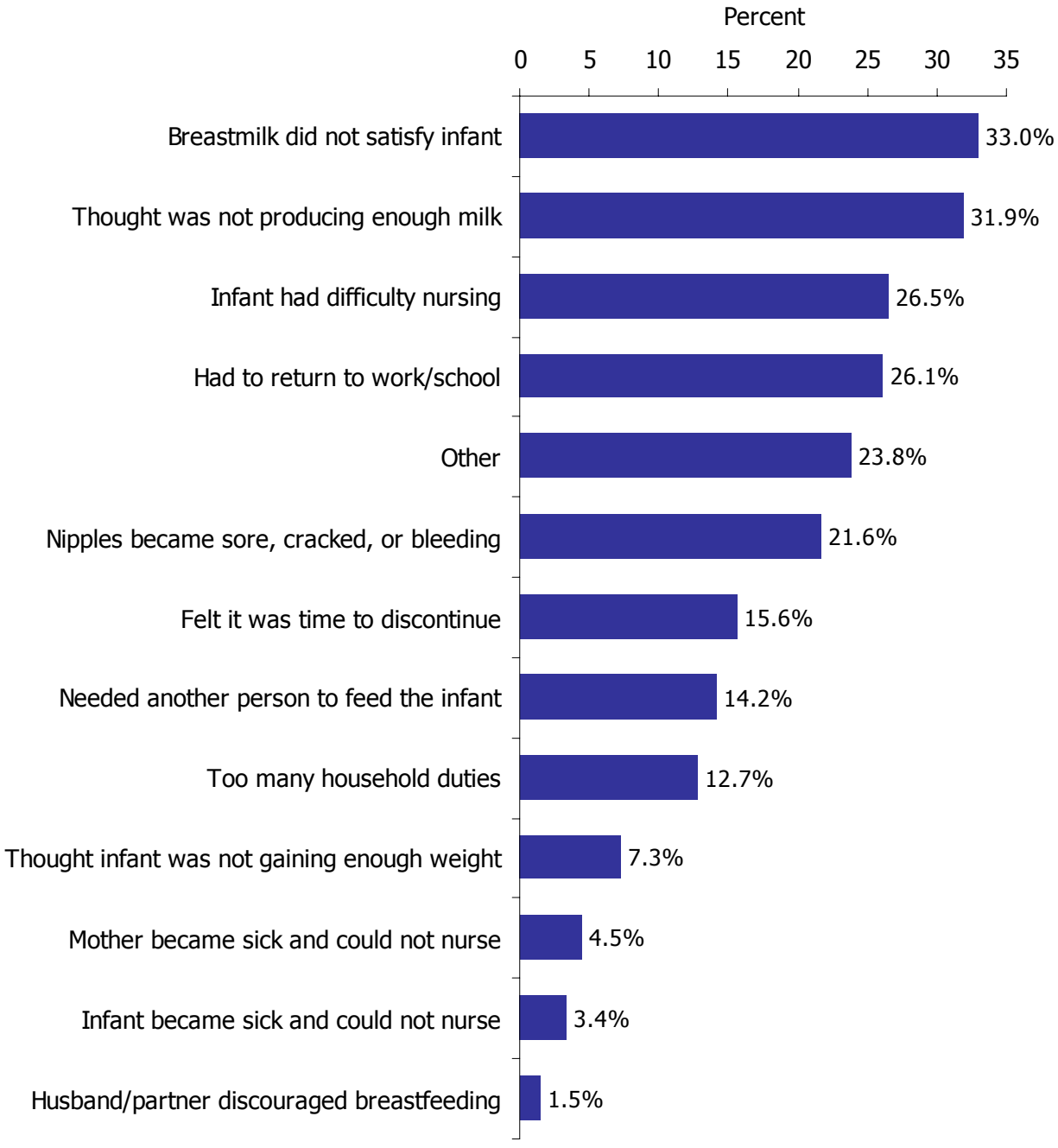


Breastfeeding

Figure 54:

Barriers to breastfeeding continuation among women who breastfed for longer than a week, but discontinued breastfeeding before surveyed,

2003 MI PRAMS



Substance Abuse: Tobacco

Definition:

An initial question, question #25, was asked to differentiate between women who have recently smoked and women who had not.

Question #25: Have you smoked at least 100 cigarettes in the past 2 years?
_No
_Yes

Women who answered 'No' to question #25 skipped the rest of the maternal smoking questions. Women who answered 'Yes' to question #25 were asked the following three questions:

Question #26: In the 3 months before you got pregnant, how many cigarettes or packs of cigarettes did you smoke on an average day? (a pack has 20 cigarettes)
 _# Cigarettes
 _# Packs
_ Less than 1 cigarette a day
_I didn't smoke
_I don't know

Question #27: In the last 3 months of your pregnancy, how many cigarettes or packs of cigarettes did you smoke on an average day?
 _# Cigarettes
 _# Packs
_ Less than 1 cigarette a day
_I didn't smoke
_I don't know

Question #28: How many cigarettes or packs of cigarettes do you smoke on an average day now?
 _# Cigarettes
 _# Packs
_ Less than 1 cigarette a day
_I didn't smoke
_I don't know

A nonsmoker is defined as a woman who was not smoking during either period of time, including women who answered no to question #25. A smoker who quit was a woman who indicated that she smoked during the initial time period, but was not smoking during the second time period. A smoker (reduced # cigarettes) was a woman who indicated that she smoked during the initial time period, but reduced the number of cigarettes in the second period. A smoker (# cigarettes same or more) is defined as a woman who indicated that she smoked during the initial time period, but maintained or increased the number cigarettes in the second period. Nonsmoker who began smoking was a woman who reported not smoking during the first time period, but who indicated smoking in the second. When analyzing women who smoked in the last three months of their pregnancy, women who indicated that they did not smoke then or who indicated that they did not smoke at all were categorized as not smoking in the last three months of their pregnancy. Women who reported smoking cigarettes, regardless of the amount, were classified as smokers. Smoking behaviors were compared as such: during

pregnancy with behavior before pregnancy, postpartum behavior with smoking during pregnancy, or postpartum behavior with pre-pregnancy behavior.

Results:

A high percentage of PRAMS respondents reported being a nonsmoker prior to pregnancy (72.4%). Among the women who had reported being a smoker prior to pregnancy, 12.2% had quit, 11.6% reduced the number of cigarettes, and the remaining 3.8% did not change or increased the number of cigarettes consumed during pregnancy (Figure #55). In the last three months of pregnancy, women in their late teens/early 20s were the most likely to report smoking, with 33.7% of women between the ages of 18-19 years reporting smoking and 22.4% of women between 20-24 years of age indicating that they smoked. Almost 90% of women 25 years of age and older reported not smoking in the last three months of pregnancy (Figure #56). Non-Hispanic Whites were the most likely to report smoking in the last three months of pregnancy, while Hispanics were the least likely to report smoking (the number for Asian/Pacific Islanders was too small to report the prevalence) (Figure #57). Like many of the other risk factors analyzed in this report, smoking rates had an inverse relationship to education: women without a high school diploma had the highest prevalence of smoking in the three months prior to delivery (29.2%), while women with at least a college degree had the lowest (1.8%) (Figure #58). In addition, women who were on Medicaid at any time had a higher rate of smoking during pregnancy when compared to women who had never received Medicaid (Figure #59).

Smoking reduction during pregnancy does not appear to be associated with a permanent decline in smoking. While a majority of women remained non-smokers during pregnancy, 12.3% reported that they smoked the same amount or more cigarettes after their pregnancy compared to their pre-pregnancy behavior. Further, a small group of individuals (0.5%) who were previously categorized as non-smokers prior to pregnancy began smoking in the postpartum period (Figure #60).

Public Health Implications:

It is well known that smoking during pregnancy has negative effects on infant birthweight. Therefore, smoking cessation programs should be offered as components of the prenatal visits as well as family planning visits during the preconceptional period, following the "Stages of Change" model developed by Dr. James Prochaska[1].

Although the majority of women reported not smoking in the third trimester, an unacceptably high percentage of women continued to smoke. Cessation programs should target women found more likely to smoke, such as those less than 20 years of age, Non-Hispanic Whites, Medicaid participants, and women with less than a high school diploma.

The risk of relapsing remains an issue. Among women surveyed, smokers who had quit during pregnancy tended to relapse during the postpartum period. Therefore, smoking cessation programs should continue to encourage the participants to permanently quit smoking.

Reference Tables: #31- #36

[1]Prochaska JO, DiClemente CC. Stages and processes of self-change of smoking: Toward an integrative model of change. *Journal of Consulting and Clinical Psychology*. 1983; 51(3): 390-395.

Substance Abuse: Tobacco

Figure 55:

Prevalence of smoking behavior during pregnancy (compared with pre-pregnancy behavior), 2003 MI PRAMS

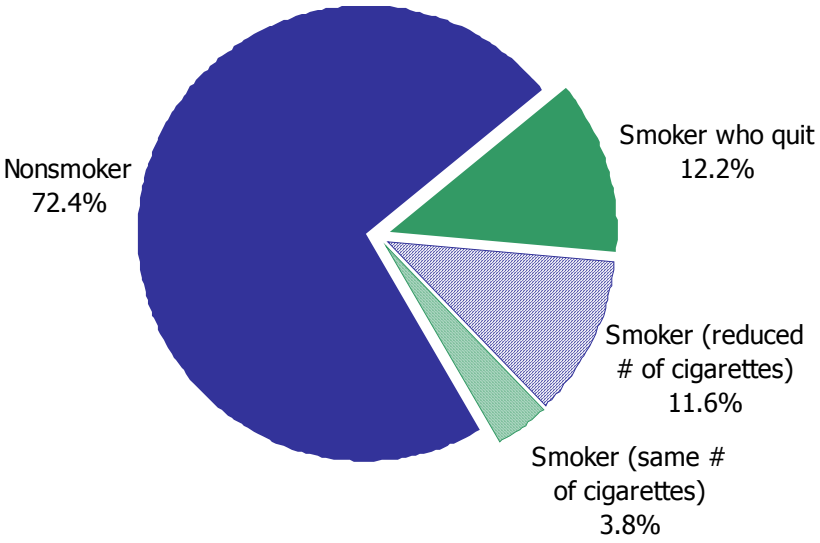
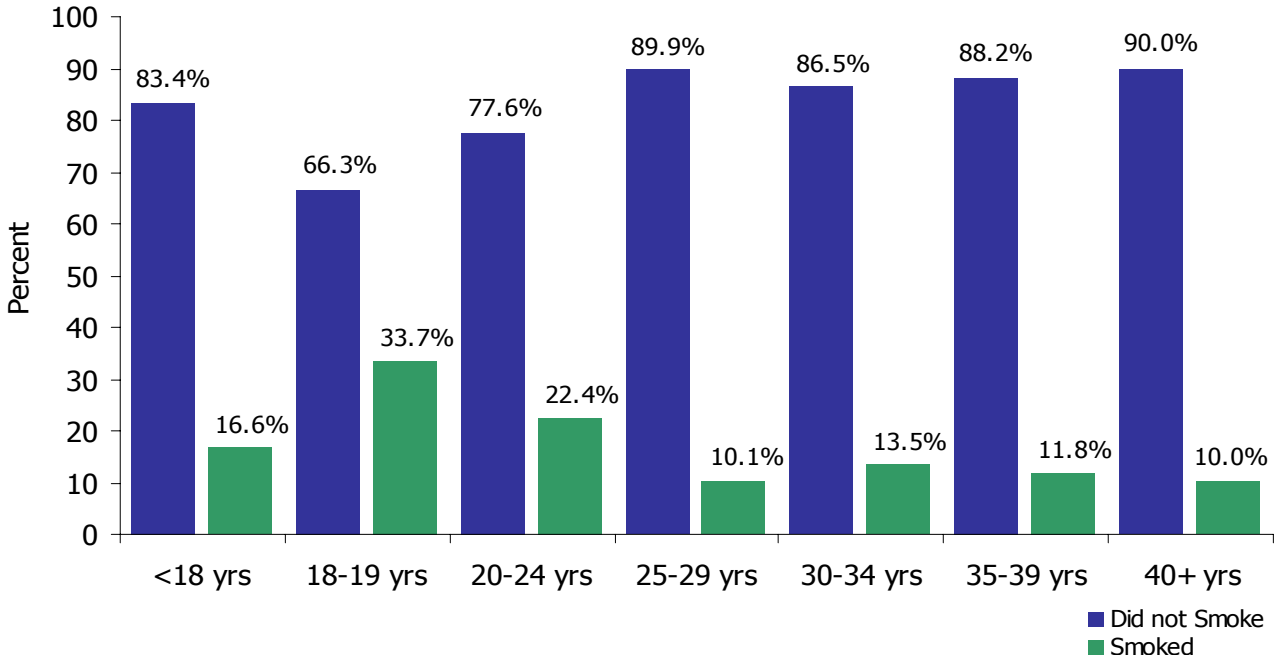


Figure 56:

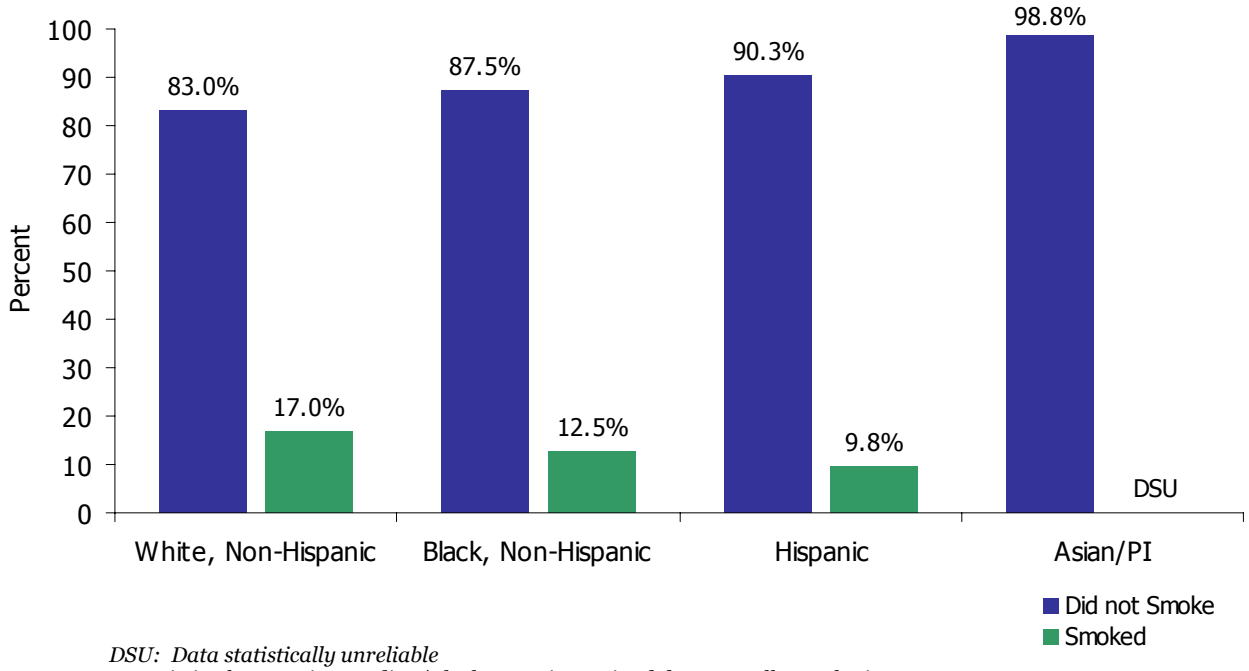
Prevalence of smoking status in the last three months of pregnancy by maternal age, 2003 MI PRAMS



Substance Abuse: Tobacco

Figure 57:

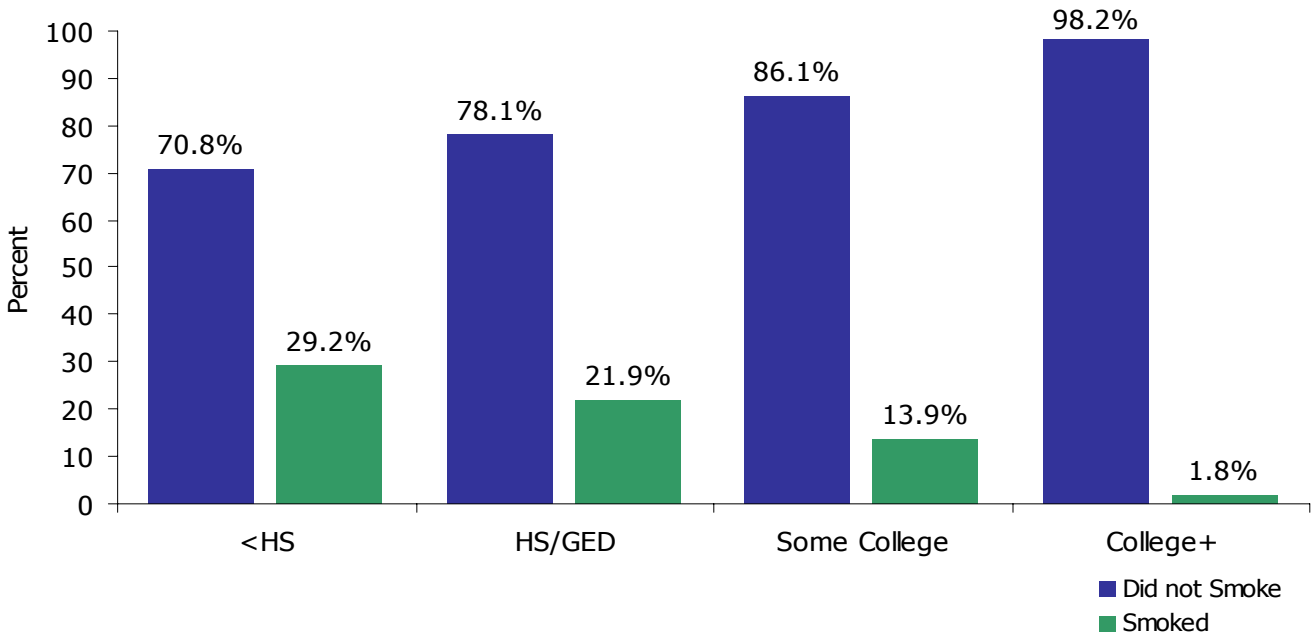
Prevalence of smoking behavior in the last three months of pregnancy by maternal race/ethnicity, 2003 MI PRAMS



DSU: Data statistically unreliable
***Statistics for American Indian/Alaskan Native omitted due to small sample size*

Figure 58:

Prevalence of smoking behavior in the last three months of pregnancy by maternal education, 2003 MI PRAMS



Substance Abuse: Tobacco

Figure 59:

Prevalence of smoking in the last three months of pregnancy by Medicaid participation, 2003 MI PRAMS

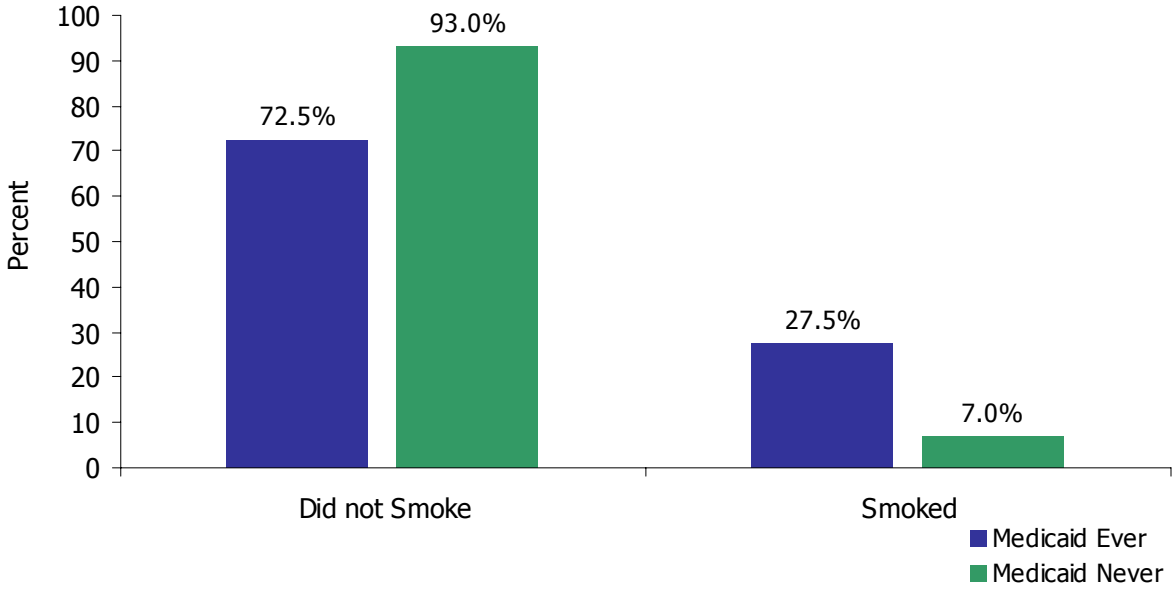
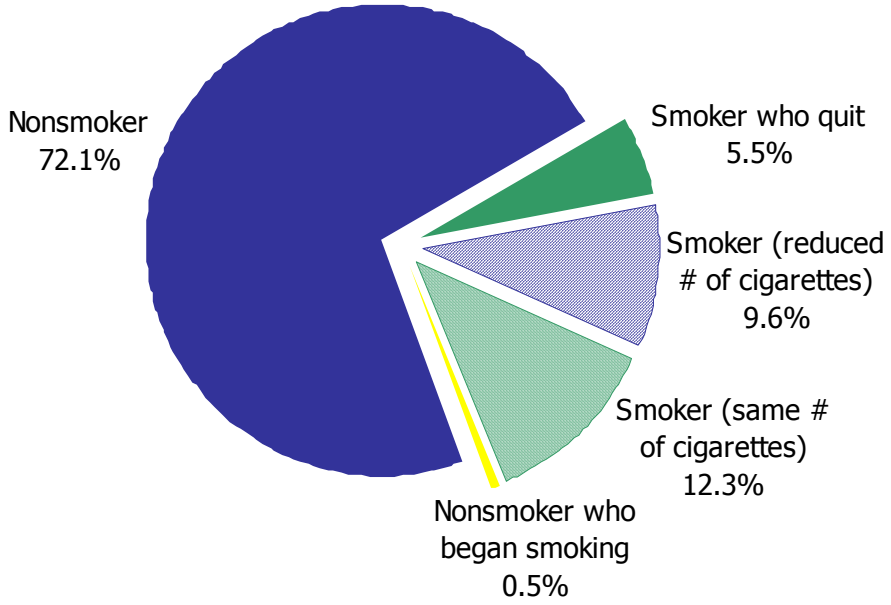


Figure 60:

Prevalence of smoking behavior in the postpartum period (compared with pre-pregnancy behavior), 2003 MI PRAMS



Substance Abuse: Alcohol Use

Definition:

Information on alcohol consumption and binge drinking are the focus of five questions on the PRAMS questionnaire. Question #29 was used to screen for drinking behavior.

Question #29: Have you had any alcoholic drinks in the past 2 years? (a drink is one glass of wine, wine cooler, can or bottle of beer, shot of liquor, or mixed drink)
_No
_Yes

Women who responded 'No' to that question skipped the rest of the alcohol consumption questions. Women who responded 'Yes' were asked the following questions:

Question #30a: During the 3 months before you got pregnant, how many alcoholic drinks did you have in an average week?
_I didn't drink then
_Less than 1 drink a week
_1-3 drinks a week
_4-6 drinks a week
_7-13 drinks a week
_14 drinks or more a week
_I don't know

Question #30b: During the 3 months before you got pregnant, how many times a week did you drink 5 alcoholic drinks or more in one sitting?
 _# Times
_I didn't drink then
_I don't know

Question #31a: During the last 3 months of your pregnancy, how many alcoholic drinks did you have in an average week?
_I didn't drink then
_Less than 1 drink a week
_1-3 drinks a week
_4-6 drinks a week
_7-13 drinks a week
_14 drinks or more a week
_I don't know

Question #31b: During the last 3 months of your pregnancy, how many times a week did you drink 5 alcoholic drinks or more in one sitting?
 _# Times
_I didn't drink then
_I don't know

Results:

During pregnancy, a majority of women reported not drinking, with 48.8% classified as drinkers who quit and 45.2% were non-drinkers. Among the few women who reported drinking during

pregnancy, 3.1% reported consuming a reduced number of alcoholic beverages and 2.9% indicated drinking the same number of drinks (Figure #61). Due to the small sample size, drinking behavior was not further stratified by maternal demographics.

Public Health Implications:

Regardless of the amount of alcohol consumed during pregnancy, the fetus is at an increased risk of Fetal Alcohol Syndrome (FAS) at birth. Preconceptional and prenatal education should continue to focus on reducing the risks of this syndrome and the other health effects of drinking during pregnancy. All prenatal care providers in clinical settings can use simple assessment tools such as the T-ACE to identify risk drinking among pregnant women.

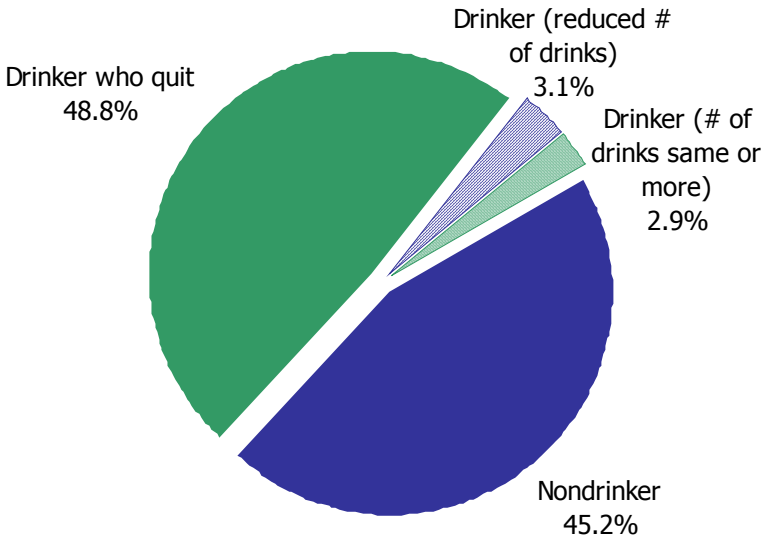
The Michigan Fetal Alcohol Syndrome program provides education about FAS to women of childbearing age with the following goals: to increase awareness and prevention of FAS, make outreach, screening, and referrals for diagnostic services easier, and provide therapeutic and social support for families with children with FAS.

Reference Tables: #37

Substance Abuse: Alcohol

Figure 61:

Prevalence of alcohol consumption during pregnancy (compared with pre-pregnancy behavior), 2003 MI PRAMS



Infant Sleep

Definition:

Information regarding infant sleeping behavior is captured by two questions: one addresses sleeping position and the other addresses bed sharing. Bed sharing is defined as infants sharing the same sleep surface as another person. Question #54 asks women whose infants were alive at the time the survey was administered:

Question #54: How do you most often lay your baby down to sleep now?
_On his or her side
_On his or her back
_On his or her stomach

Details on bed sharing practices were also asked of women whose infants were alive at the time surveyed. This topic is addressed by the following:

Question #55: How often does your new baby sleep in the same bed with you or anyone else?
_Always
_Almost always
_Sometimes
_Rarely
_Never

Infants were classified as "Rarely/never bed shared" if mother responded that they never/rarely slept in the same bed with someone else. Mothers who indicated that their infant sometimes bed shared were classified as "sometimes bed shared." Mothers of infants classified as "Always/almost always bed shared," indicated that their infant always or almost always slept in the same bed with someone else.

Results:

During 2003, 72.2% of women reported placing their infant to sleep on their back, 13.7% on their stomach, and 14.1% on their side (Figure #62). Women over 35 and younger than 18 years of age were the most likely to report placing their infants to sleep on their stomach/prone (Figure #63). Non-Hispanic Black women were the least likely to report placing their infant to sleep on their back (58.3%). The prevalence rates for back sleeping position were all above 70% for Non-Hispanic Whites, Hispanics, and Asian/Pacific Islanders (Figure #64). The back sleeping position had the lowest prevalence among women with less than a high school education (65.7%), while women with a college degree were the most likely to place their infant to sleep on their backs (75.4%) (Figure #65). Women who had ever been on Medicaid reported a lower rate of placing infants in the back sleeping position when compared to women who had never been on Medicaid (Figure #66).

About 18.2% of the PRAMS respondents reported always or almost always bed sharing (Figure #67). Women under 20 years of age reported the highest rate of always/almost always bed sharing. Less than 20% of women over 20 years of age reported always/almost always bed sharing (Figure #68). When stratified by race/ethnicity, both Non-Hispanic Black and Asian/Pacific Islanders had the highest rate of always/almost always bed sharing at approximately 38%. Further, Non-Hispanic Whites have the lowest prevalence with 12.6%

indicating always/almost always bed sharing (Figure #69). The prevalence of always/almost always bed sharing was inversely related to maternal education, with women with at least a college education possessing the lowest prevalence (12.5%) and women without a high school diploma having the highest rate (28.3%) (Figure #70).

Public Health Implications:

The "Back to Sleep" campaign begun in 1994 in Michigan has improved the practice of many mothers to put infants to sleep on their backs. However, the campaign needs to identify and address changes in the public health message, which will be more effective for women who are less than 20 years of age, Non-Hispanic Black and have less than a high school education. Also, MDCH should explore further the possibility of adding the "Back to Sleep" curriculum in the Michigan Model for School Health education and develop a strategy for working with teen health centers on safe sleep issues.

The new information gathered about the high prevalence of bed sharing in Michigan is a timely contribution to the planning for a statewide "Infant Safe Sleep" campaign sponsored by MDCH, Michigan Department of Human Services, and Michigan Department of Education. A work group recently reported on the growing risk of sudden infant death associated with infants sleeping in unsafe arrangements. Important ethnic and age-appropriate considerations are needed to adequately target younger women to avoid suffocation risk associated with bed sharing. The high prevalence of this risky behavior demands rigorous study of the reasons behind the numbers, including qualitative evaluation of women's stories about why they bedshare.

Reference Tables: #38- #41b

Infant Sleep

Figure 62:
Prevalence of infant sleep position,
2003 MI PRAMS

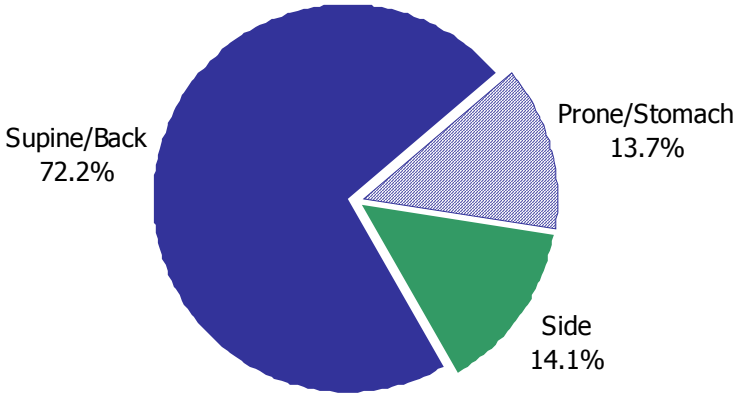
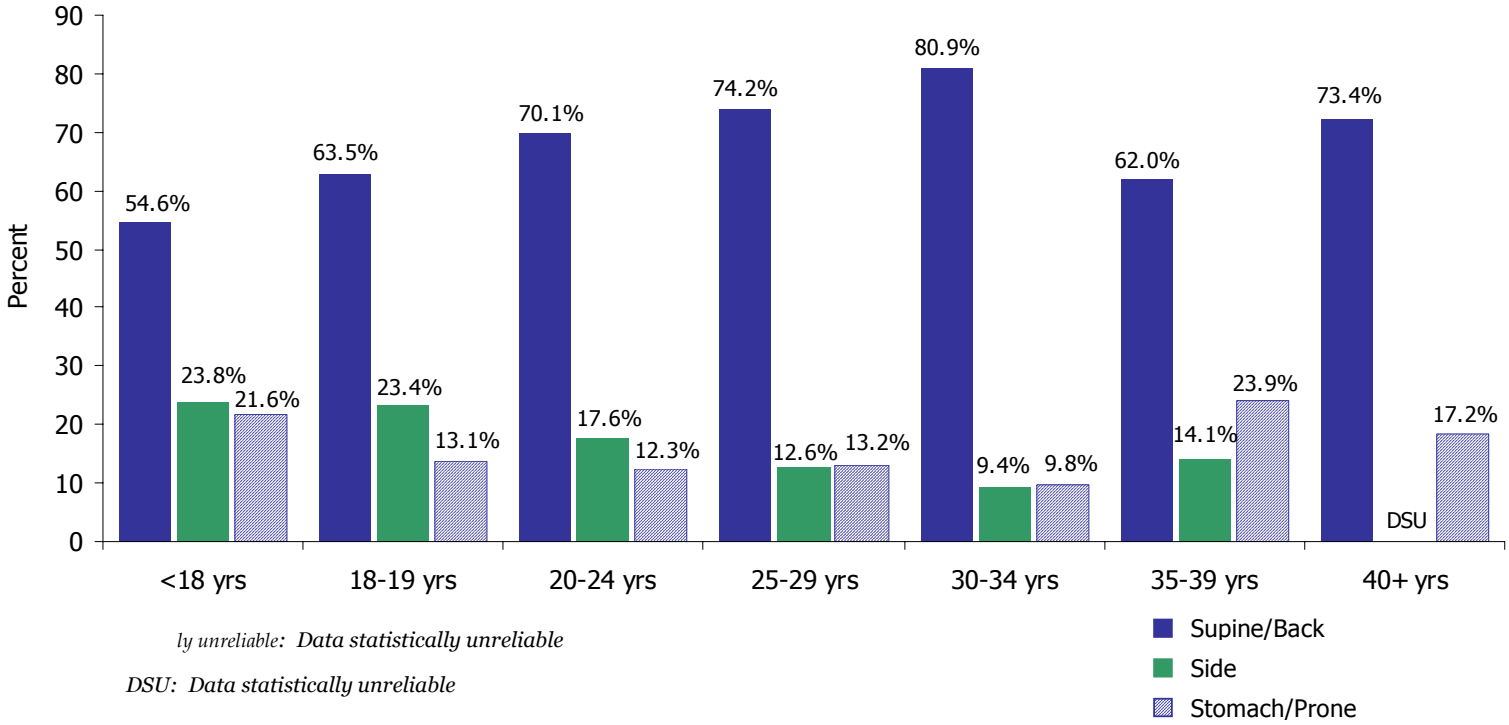


Figure 63:
Prevalence of infant sleep position by maternal age,
2003 MI PRAMS



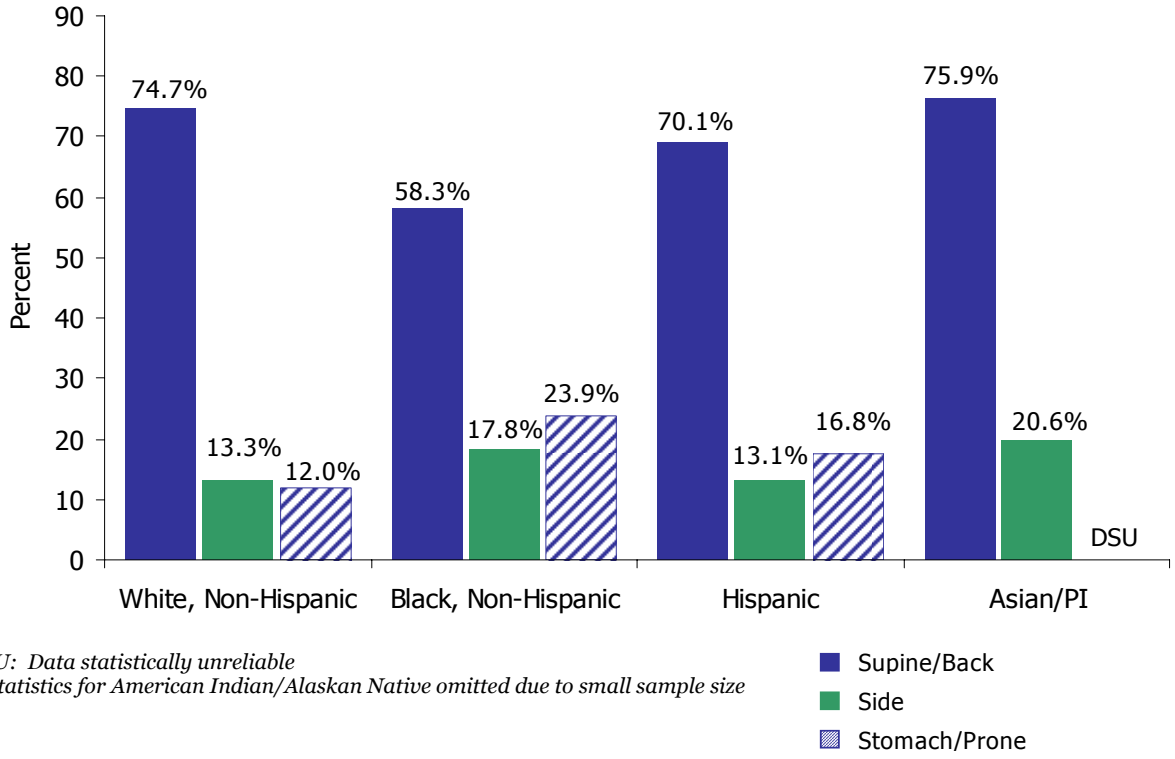
ly unreliable: Data statistically unreliable

DSU: Data statistically unreliable

Infant Sleep

Figure 64:

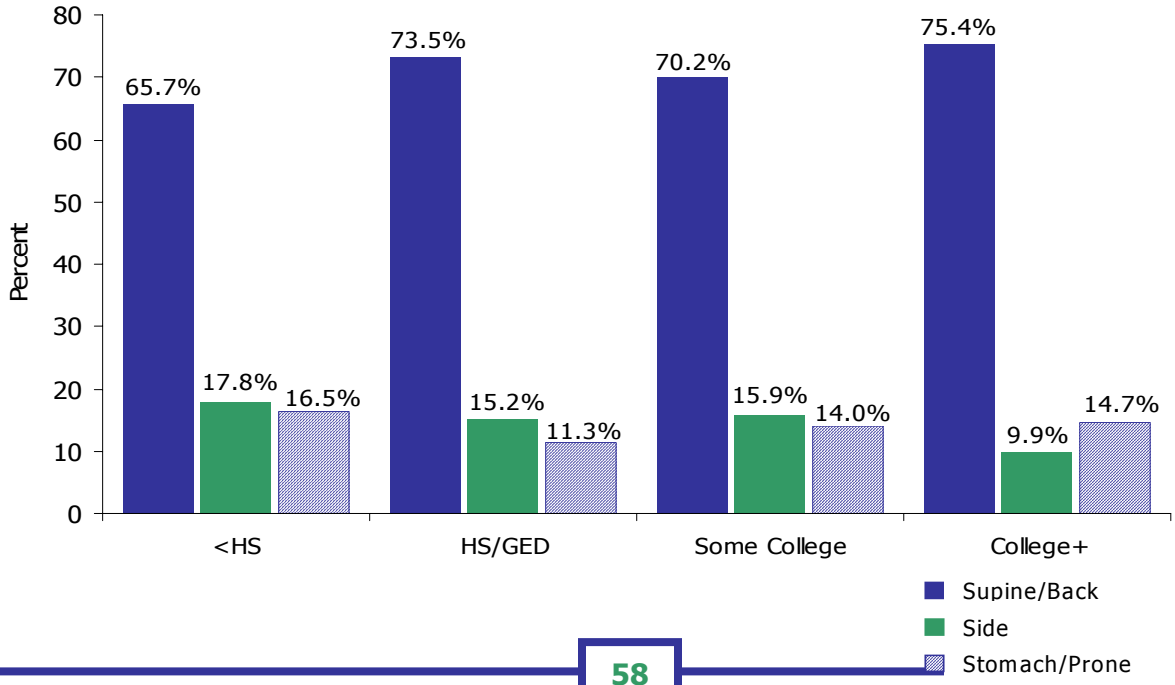
Prevalence of infant sleep position by maternal race/ethnicity,
2003 MI PRAMS



DSU: Data statistically unreliable
***Statistics for American Indian/Alaskan Native omitted due to small sample size*

Figure 65:

Prevalence of infant sleep position by maternal education,
2003 MI PRAMS



Infant Sleep

Figure 66:

Prevalence of infant sleep position by maternal insurance status,

2003 MI PRAMS

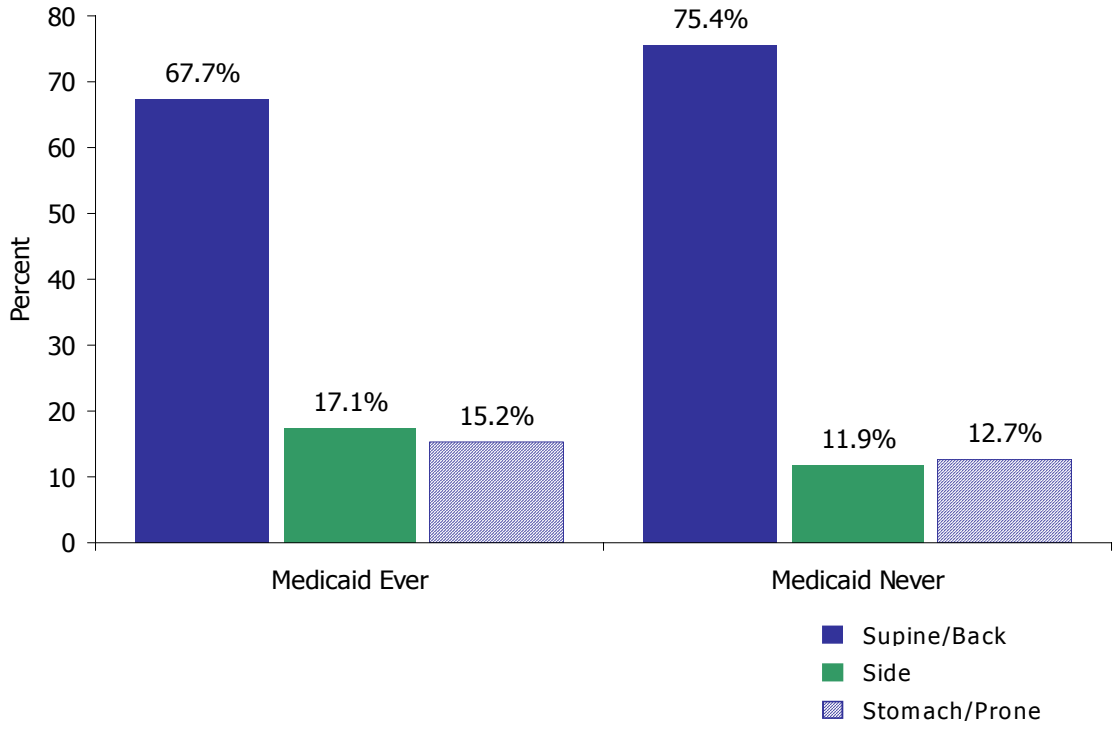
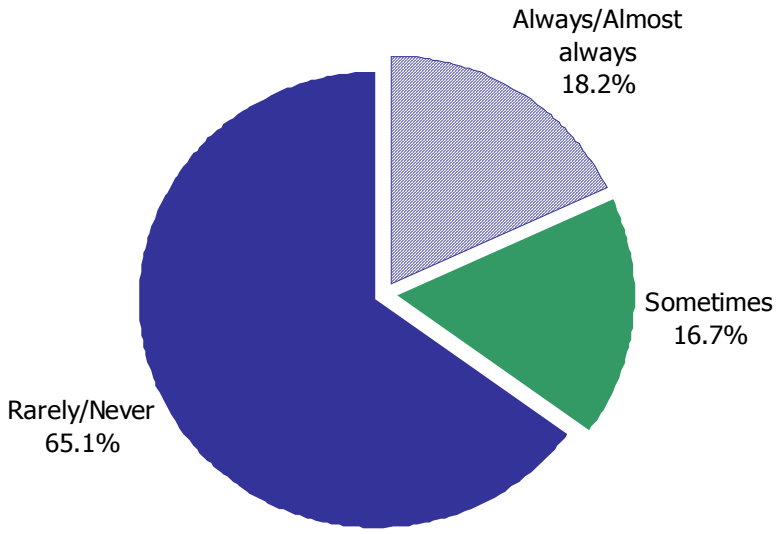


Figure 67:

Prevalence of infant bed sharing,

2003 MI PRAMS



Infant Sleep

Figure 68:

Prevalence of infant bed sharing by maternal age,

2003 MI PRAMS

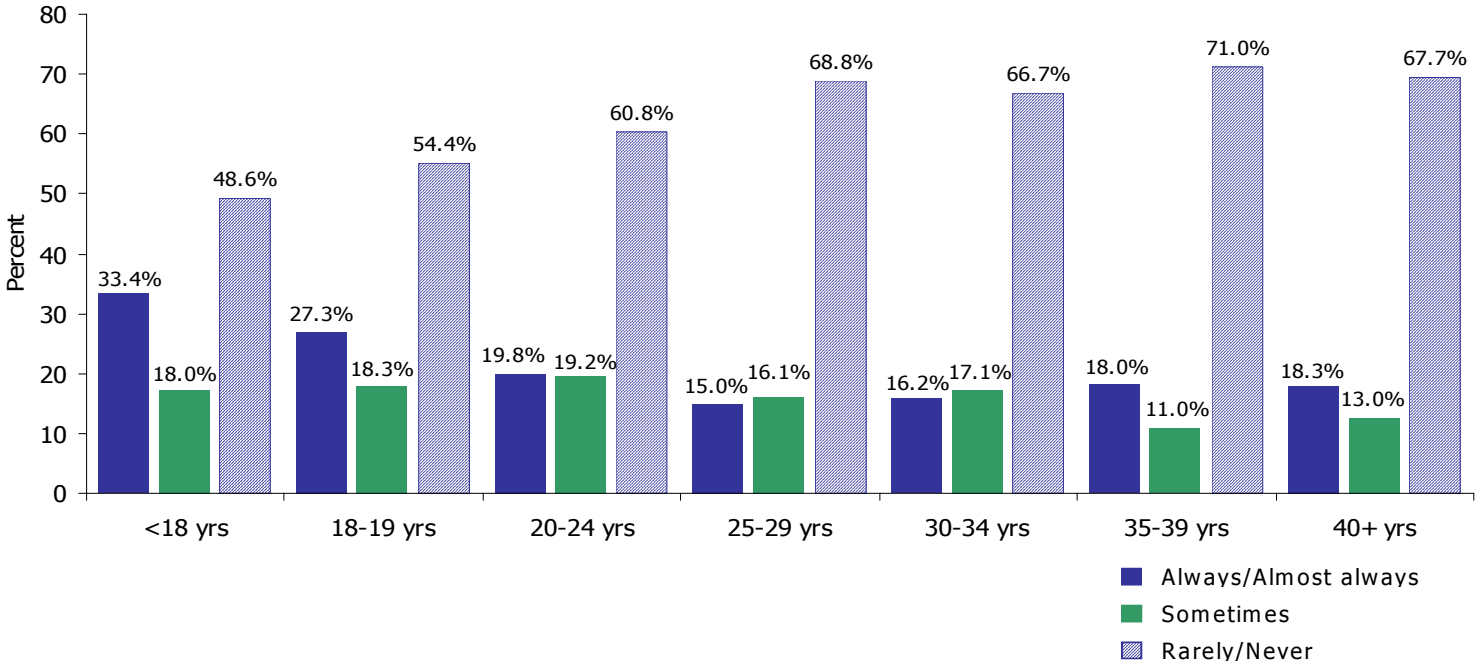
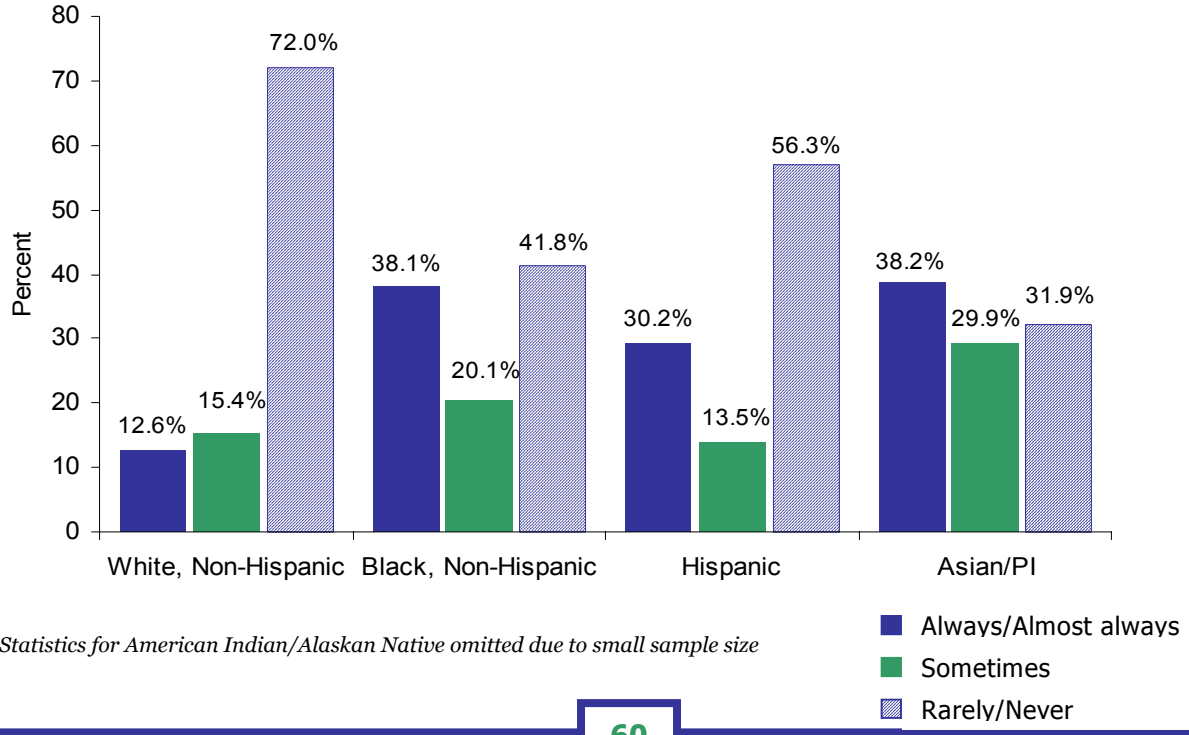


Figure 69:

Prevalence of infant bed sharing by maternal race/ethnicity,

2003 MI PRAMS



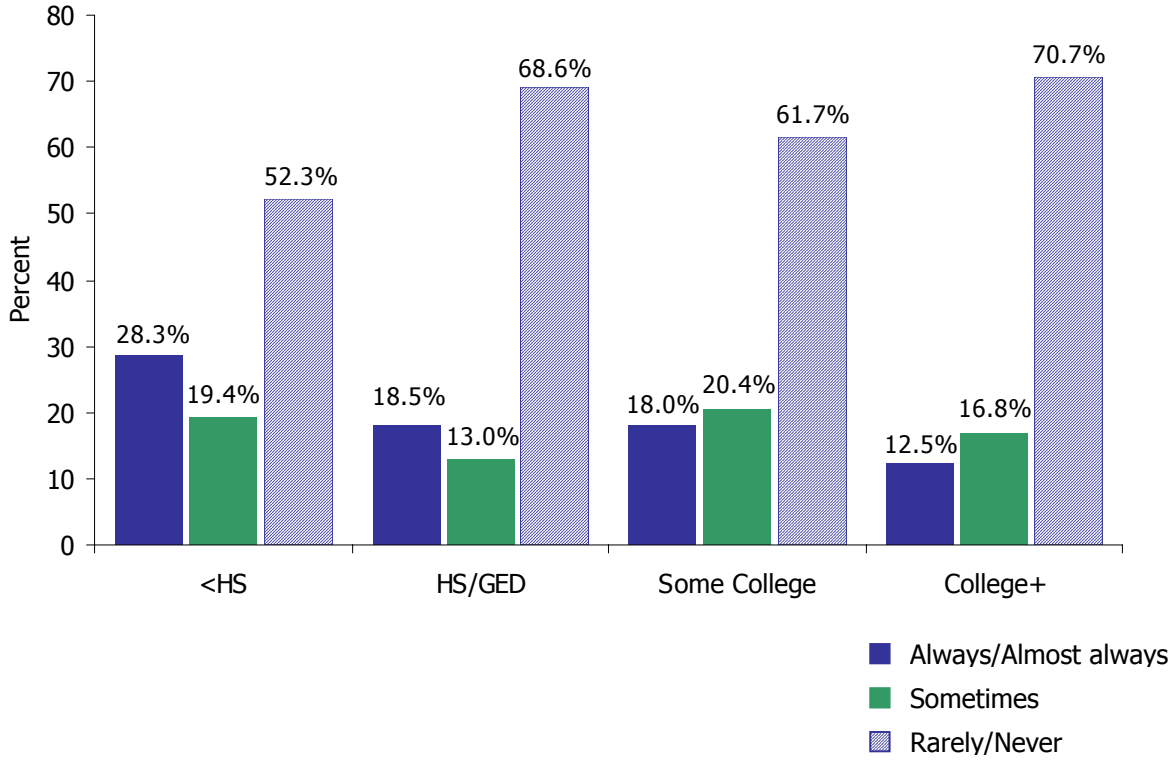
***Statistics for American Indian/Alaskan Native omitted due to small sample size*

Infant Sleep

Figure 70:

Prevalence of infant bed sharing by maternal education,

2003 MI PRAMS



Violence Against Women

Definition:

Information regarding abuse, both physical and verbal, was derived from five questions asked of all women surveyed for PRAMS.
Women classified as being abused prior to pregnancy responded 'Yes' to either Question #33a or Question #33b, which ask:

> *Question #33a: During the 12 months before you got pregnant, did your husband or partner push, hit, slap, kick, choke, or physically hurt you in any other way?*
> *_No*
> *_Yes*
>
> *Question #33b: During the 12 months before you got pregnant, did anyone else push, hit, slap, kick, choke, or physically hurt you in any other way?*
> *_No*
> *_Yes*

Women classified as being abused during pregnancy responded 'Yes' to either Question #34a or Question #34b, which ask:

> *Question #34a: During your most recent pregnancy, did your husband or partner push, hit, slap, kick, choke, or physically hurt you in any other way?*
> *_No*
> *_Yes*
>
> *Question #34b: During your most recent pregnancy, did anyone else push, hit, slap, kick, choke, or physically hurt you in any other way?*
> *_No*
> *_Yes*

The issue of verbal abuse was addressed in question #73. Women were classified as experiencing verbal abuse or not experiencing verbal abuse depending on their response to option 'f':

> *Question #73: This question is about things that may have happened during the 12 months before your new baby was born.*
> *f. You were repeatedly called names, told you were worthless, ugly, or verbally threatened by your partner or someone important to you.*
> *_No*
> *_Yes*

Results:

Among PRAMS respondents, 5.6% reported experiencing abuse in the year prior to their pregnancy with the woman's husband/partner being named the abuser in 74.3% of the cases (Figure #71). The same was true during pregnancy, with about 3.4% of women indicating being physically abused (Figure #72). Approximately 6.3% of women reported being verbally abused in the year prior to pregnancy (Figure #73).

Public Health Implications:

Only a small percentage of women report either physical or verbal abuse. Standardized screening tools used by providers during prenatal care would help identify women who are victims of abuse. These women can then be referred to appropriate services.

Reference Tables: #42- #46

Violence Against Women

Figure 71:

Prevalence of pre-pregnancy physical abuse and abuser,

2003 MI PRAMS

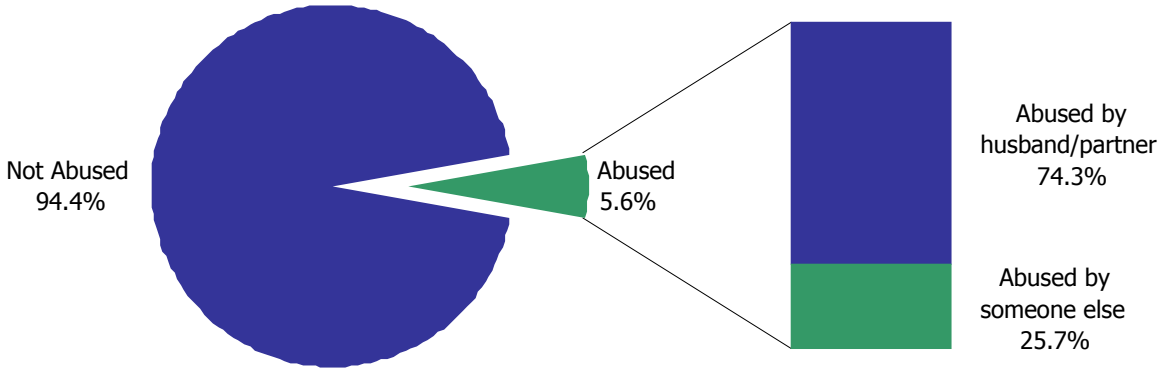
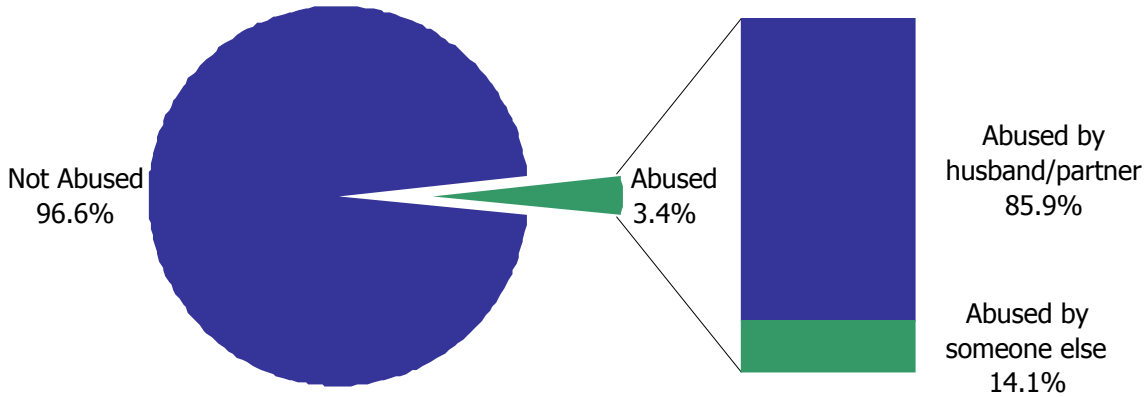


Figure 72:

Prevalence of physical abuse during pregnancy and abuser,

2003 MI PRAMS

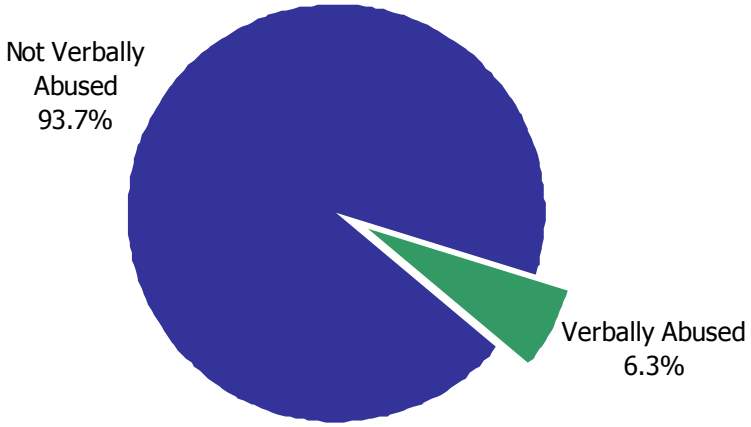


Violence Against Women

Figure 73:

Prevalence of verbal abuse in the year prior to delivery,

2003 MI PRAMS



Folic Acid Awareness

Definition:

Folic acid deficiency has been implicated in the increased risk of birth defects, particularly neural tube defects. One question in the PRAMS questionnaire asked about the participant's awareness of the benefits of folic acid prior to pregnancy:

> *Question #71: Before you became pregnant with your new baby, did either of the following things happen?*
> *_You heard or read that taking the vitamin folic acid or foods that contain it (orange juice, citrus fruits, broccoli, green leafy vegetables, and fortified cereal) could prevent some birth defects.*
> *_Your doctor or nurse instructed you on how to get enough folic acid*

The participant was considered to be aware of the benefits of folic acid if she responded "Yes" to either option. Only if she responded "Yes" when asked whether she was instructed by a doctor or nurse about folic acid was she considered knowledgeable of the benefits and the appropriate amount of folic acid to consume. Although no question directly addresses the consumption of folic acid, question #3 of the survey was used to approximate folic acid consumption.

> *Question #3: In the month before you got pregnant with your new baby, how many times a week did you take a multivitamin (a pill that contains many different vitamins and minerals)?*
> *_I didn't take a multivitamin at all*
> *_1-3 times a week*
> *_4-6 times a week*
> *_Every day of the week*

Women who indicated that they took a multivitamin everyday were classified as having "consumed an appropriate amount." Those women who took a multivitamin 1-6 times a week were considered as having "consumed less than appropriate amount of folic acid," and those who did not take any multivitamin were categorized as having "consumed no folic acid."

Results:

When both folic acid awareness and instruction are combined, 60.3% of women were aware and instructed by a healthcare professional about the importance of folic acid in reducing the risk for birth defects. Another 19.9% were aware but received no instruction, 14.9% were neither aware nor instructed, and the final 5.0% of women did not have any prior awareness but were instructed on folic acid by their healthcare provider (Figure #74).

About 53.7% of women reported not taking any multivitamins in the month prior to pregnancy and about 29.4% reported taking a multivitamin daily (Figure #75). Consumption of a multivitamin was then stratified by women's awareness and receipt of instruction on the importance of folic acid consumption. The prevalence of daily multivitamin consumption was highest among women (37.9%) who reported to be both aware and instructed by a healthcare professional about the benefits of folic acid. However, about 13.5% of women who were neither instructed nor aware of folic acid reported taking a daily multivitamin in the month prior to pregnancy (Figure #76).

Public Health Implications:

The recommended dose of folic acid is 400µg/day. In the survey, the assumption was made that all multivitamins the mother may have taken in the month prior to pregnancy contained the recommended amount of folic acid.

There appears to be a disconnect to the proper usage however, between knowledge of the benefits of folic acid and consumption of a daily supplement. The majority of women knew about the sources and benefits of folic acid, but they did not consume a multivitamin daily. Continued education about the benefits of folic acid consumption is still needed, particularly in the preconceptional period, to encourage women of childbearing age to take a multivitamin.

Reference Tables: #47- #51b

Folic Acid Awareness

Figure 74:

Prevalence of folic acid awareness and/or instruction,

2003 MI PRAMS

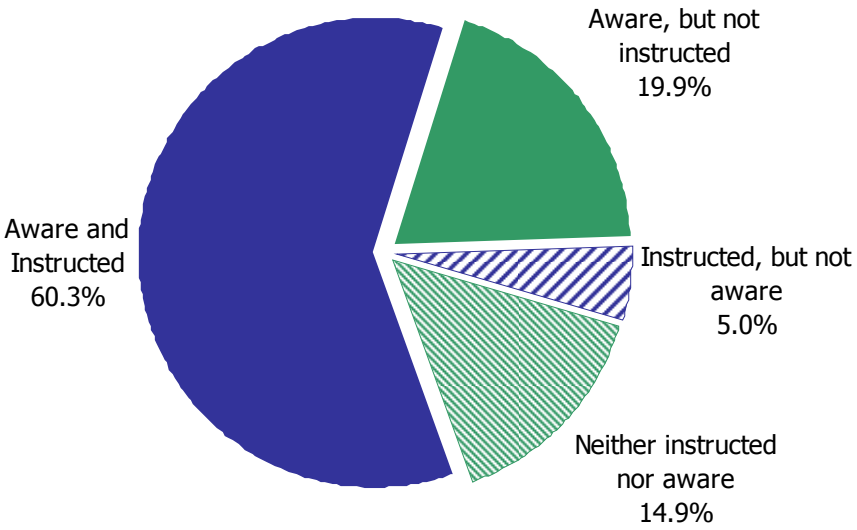
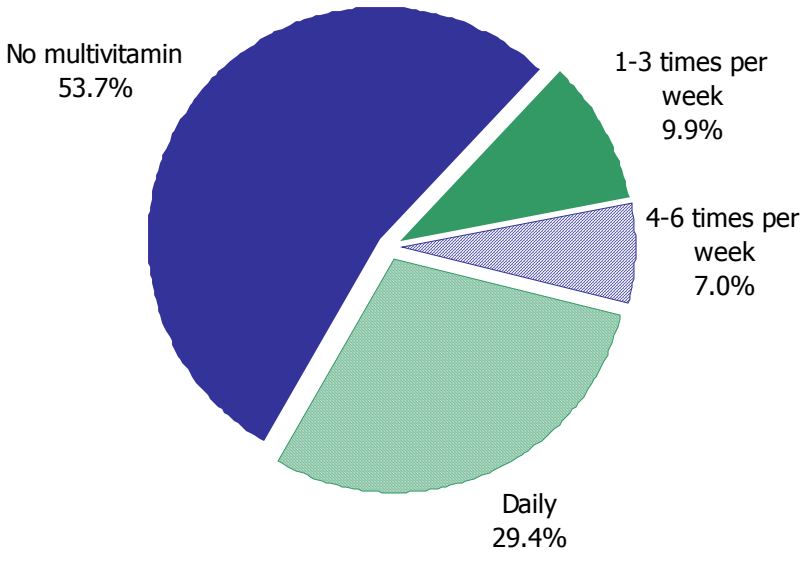


Figure 75:

Frequency of consumption of a multivitamin in the month prior to pregnancy,

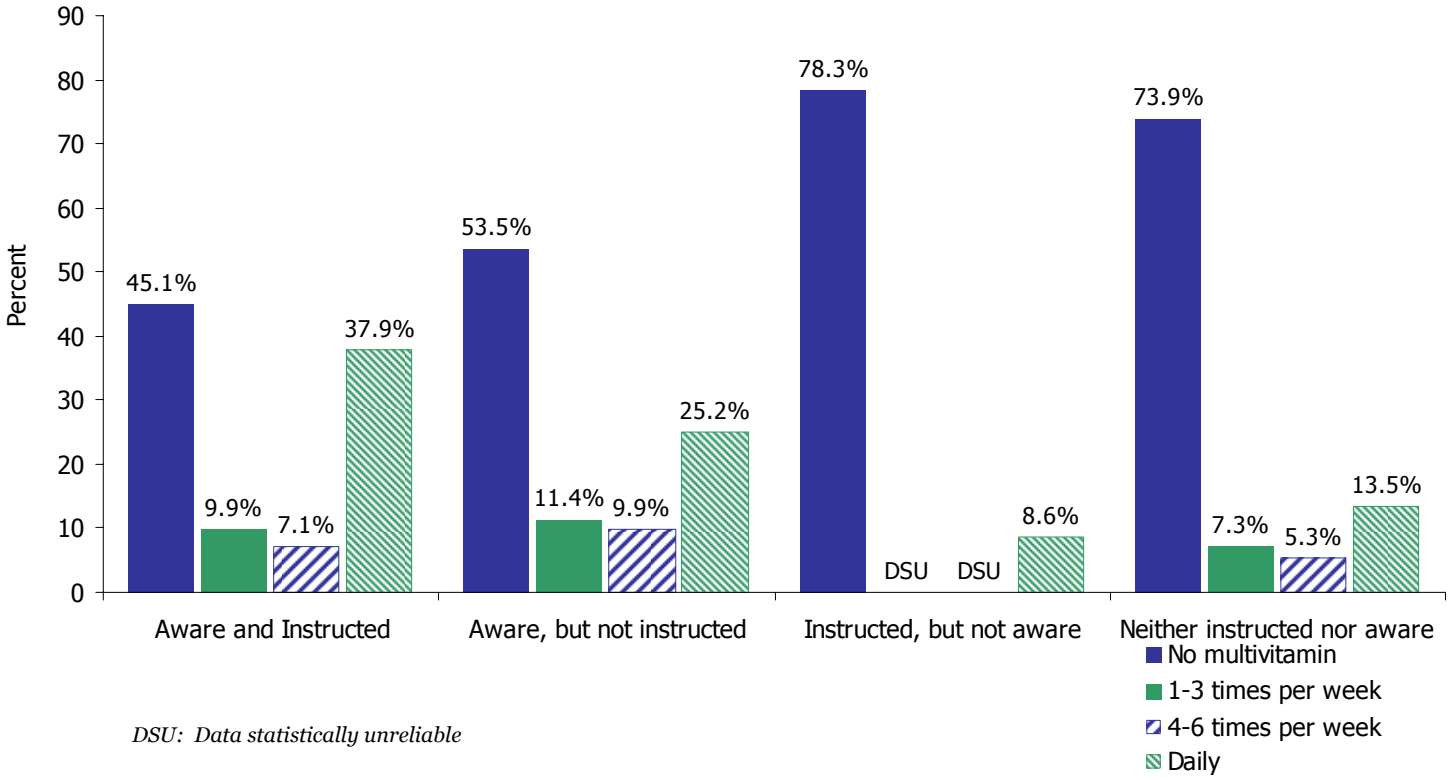
2003 MI PRAMS



Folic Acid Awareness

Figure 76:

Consumption of a multivitamin in the month before pregnancy by awareness of/instruction about folic acid, 2003 MI PRAMS



DSU: Data statistically unreliable

WIC Participation

Definition:

Three questions regarding the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) were asked of women completing the PRAMS survey. The first of these questions (Question #22) identifies women who participated in WIC during their pregnancy.

Question #22: During your pregnancy, were you on WIC (the Special Supplemental Nutrition Program for Women, Infants, and Children)?
_No
_Yes

Women were categorized as either participating in WIC during pregnancy or not participating in WIC during their pregnancy. Regardless of their answer, however, all women were asked an additional WIC question. Information on women and their infant's participation in WIC during the *postpartum period* was gathered from answers to question #79:

Question #79: Are you or your baby enrolled in WIC now?
_My baby is on WIC
_Both my baby and I are on WIC
_I am on WIC
_Neither I nor my baby are on WIC

Only women who indicated their infant was not enrolled in WIC, irrespective of their own participation, were asked why their infant was not participating in the program.

Question #80: Why wasn't your new baby enrolled in WIC?
_My baby was not eligible
_I didn't know about WIC
_I didn't want to enroll my baby
_Other

Not every pregnant and postpartum woman surveyed by PRAMS is eligible to participate in WIC. There are income and nutritional risk criteria for enrollment in Michigan's WIC. Participants must be a pregnant or postpartum woman, reside in Michigan, and be at or below 185% of the Poverty Income Guideline or participate in another state-administered program that utilizes the same income guideline and be classified by a health professional as "nutritionally at risk." While income criteria can be defined, the nutritional risk could not be ascertained with the PRAMS questionnaire. Therefore, this analysis was restricted to women who participated in Medicaid prior to pregnancy, had Medicaid-paid prenatal care, Medicaid-paid delivery, or received federal assistance as part of their income in the year prior to delivery as income criteria to identify those who were potentially eligible for WIC.

Results:

An estimated 55,000 women were classified as being potentially eligible for WIC based on the above income-based criteria. Among the women who met the income requirements, about 23.8% did not participate in WIC during their pregnancy (Figure #77). During the postpartum period, the prevalence of both mother and/or infant participating was about 57.5% (Figure #78). The reasons most frequently cited for non-participation in WIC were: did not want the infant to

participate in WIC or were unaware of the program (Figure #79). Almost half (44.7%) of the women reported "other reasons", not described further in the PRAMS questionnaire.

Public Health Implications:

Based on the PRAMS survey, Michigan's WIC program serves approximately three-quarters of women who were identified as potentially eligible. These data should be used with caution as the information obtained from the PRAMS questionnaire is self-reported and the method PRAMS utilizes to define eligibility does not include the full eligibility criteria used by the WIC program. The Michigan WIC program's continuing efforts in outreach activities to reach the most at-risk populations and educate them about the benefits of WIC enrollment on birth outcome has helped in increasing program participation.

Reference Tables: #52- #54

WIC Participation

Figure 77:

Participation in WIC during pregnancy among income eligible women, 2003 MI PRAMS

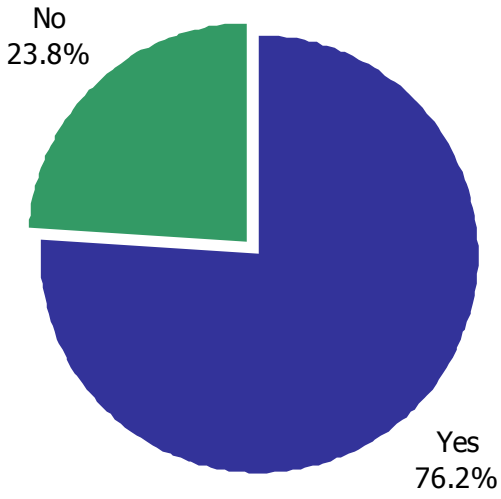
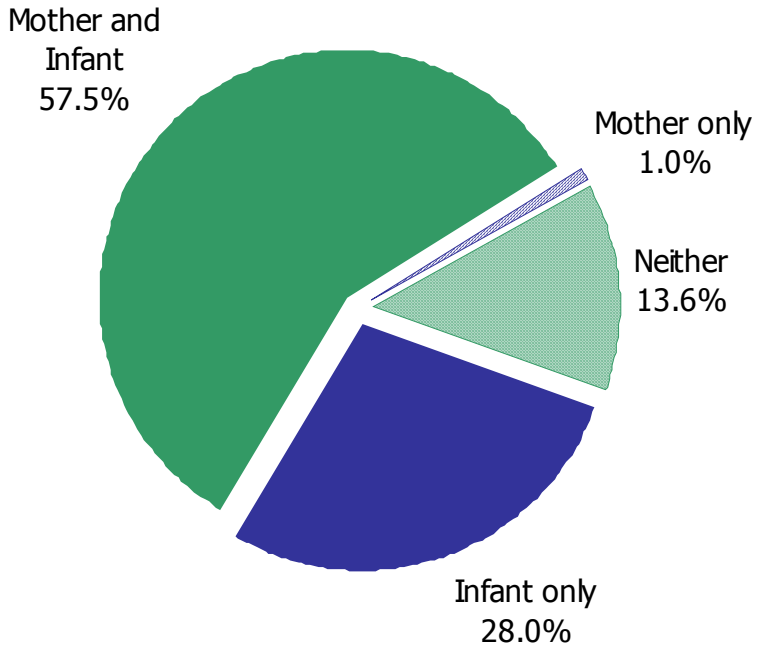


Figure 78:

Participation in WIC in the postpartum period among income eligible women, 2003 MI PRAMS



WIC Participation

Figure 79:

Reasons for infant non-participation in WIC among income eligible women whose infant did not participate in WIC,

2003 MI PRAMS

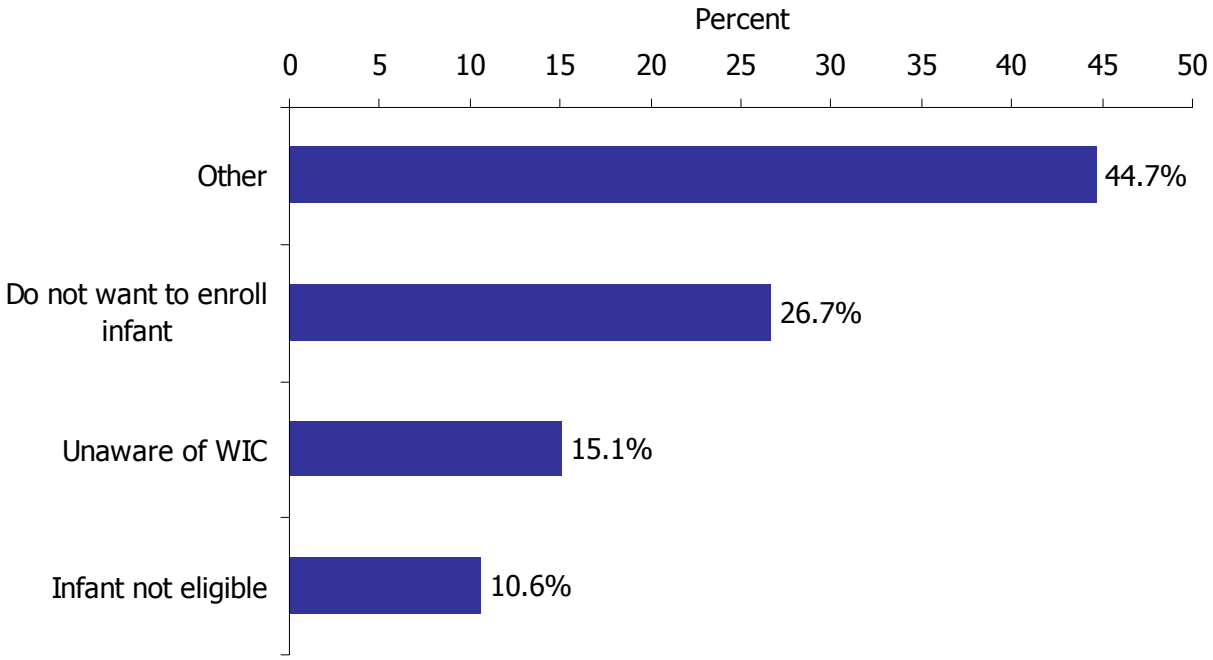


Table of Figures

Methodology

The Pregnancy Risk Assessment Monitoring System (PRAMS) is a population-based survey that is part of the Centers for Disease Control and Prevention (CDC) initiative to reduce infant mortality and low birthweight. The Michigan Department of Community Health (MDCH), under the auspices of the CDC, conducted the data collection for the 2003 Michigan PRAMS. Software developed by the CDC was used to manage the sample, enforce protocol, and enter data.

PRAMS surveys mothers who have delivered a live-born infant within a calendar year. Natality information, collected by Michigan's Office of Vital Records and Health Statistics, is the most complete single source of information regarding the live births of Michigan residents and serves as the sampling frame from which PRAMS selects survey participants. Mothers who had delivered a live-born infant who subsequently died are included in the sampling frame. Also, only one infant of a multiple gestation is included in the sampling frame unless the gestation includes four or more siblings. In that instance, all of the infants are excluded from the sampling frame. Other exclusions include: out-of-state births to residents, in-state births to nonresidents, missing information, delayed or early processing of birth certificates, adopted infants, and surrogate births. Oversampling is utilized to gather a sufficient number of responses among small subpopulations within the state. For 2003, Michigan oversampled for women who had delivered low birthweight infants.

PRAMS is a stratified random sample. Stratification permits both separate estimates of subgroups of interest and permits comparisons across these subgroups. In 2003, the sample was stratified by infant birthweight (Low or Normal) and geographic region (SE Region, Other Urban Areas populations >25,000, All Other Areas). Each month a sample is drawn from the births recorded in the month previous. Once the sample has been identified, the information is forwarded to the Michigan State University (MSU) Office of Survey Research, which is subcontracted by MDCH to conduct the survey.

PRAMS utilizes a mixed-mode methodology in order to gather information from women selected to participate in the survey. This combination mail/telephone survey methodology, based on the research of Don Dilman, is utilized in order to maximize response rates. Women are first notified of the PRAMS survey and then sent the questionnaire, by mail. If the mother has not responded after three attempts by mail, she is then contacted by telephone and has the opportunity to participate in the PRAMS survey via telephone. From a total of 2200 women

who were selected from the sampling frame to participate, 1568 (71%) women were surveyed. The demographic characteristics of these women are depicted in the section entitled 'Maternal Demographics'.

The questionnaire consists of two parts. First, there are core questions, developed by the CDC, that appear on all states' surveys. Second, there are state-added questions that are tailored to each state's needs. Topics addressed in the PRAMS core questionnaire include barriers to and content of prenatal care, obstetric history, maternal use of alcohol and tobacco, physical abuse, contraception, economic status, maternal stress, and early infant development and health status. Some state-added questions provide additional insight on topics already addressed in the core questionnaire, including content of prenatal care, contraception, and physical abuse. Other questions address different topics, including social support and services, mental health, and injury prevention. Topics addressed by the new state-added questions include: racism, mental health, mental/emotional abuse, and pre-pregnancy contraception.

Weighting

After the data collection is concluded, mothers' responses are linked to their corresponding birth certificate data. The linked PRAMS response/birth certificate dataset is then sent to the CDC for weighting. Weighting allows public health professionals and researchers to estimate the statistics for the entire state's population of women who delivered a live-born infant from data gathered from a sample of mothers in that population. In PRAMS there are three weighting components that adjusted for sample design, nonresponse, and omissions in the sampling frame. Nonresponse adjustment factors attempt to compensate for the tendency of women having certain characteristics (such as being unmarried or less educated) to respond at lower rates than women without those characteristics. The rationale for applying nonresponse weights is the assumption that nonrespondents would have provided similar answers to respondents' answers for that stratum and adjustment category.

Interpretation of Results

As with all surveys, PRAMS is not free of sampling error. The 95% confidence intervals are included in order to quantify this error and to clarify the degree of certainty in the estimates.

As stated earlier, the 2003 Michigan sample was stratified by infant birthweight (Low or Normal) and geographic region (SE Region, Other Urban Areas, All Other Areas). The information in this report was weighted to estimate the characteristics for the entire cohort of women delivering a live-born infant in 2003. The overall response rate was 71%. The response rate for each of the strata is as follows:

- SE Region/LBW: 65%
- SE Region/NBW: 69%
- Other Urban Areas/LBW: 59%
- Other Urban Areas/NBW: 71%
- All Other Areas/LBW: 77%
- All Other Areas/NBW: 76%

SE region low birthweight stratum, the SE normal birthweight region and the other urban areas low birthweight stratum had response rates that fell short of the 70% rate that the CDC regards as the epidemiologically-valid threshold for PRAMS. Analysis specific to these strata will result in potentially biased estimates. Consequently, the information regarding these strata must be viewed with caution.

Appendix B: Detailed Tables

Table 1:
Selected demographic characteristics,
2003 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Total	1,568	126,972	100.0		
Age					
<18 yrs	52	4,890	3.9	2.9	5.2
18-19 yrs	81	7,033	5.5	4.4	7.0
20-24 yrs	388	30,889	24.3	21.9	26.9
25-29 yrs	470	38,261	30.1	27.6	32.8
30-34 yrs	368	29,738	23.4	21.1	25.9
35-39 yrs	169	13,429	10.6	8.9	12.5
40+ yrs	40	2,732	2.2	1.5	3.1
Race/Ethnicity					
White, Non-Hispanic	1,178	93,679	75.0	72.3	77.4
Black, Non-Hispanic	245	20,672	16.5	14.4	18.9
Hispanic	68	6,357	5.1	3.9	6.6
American Indian	6	417	0.3	0.1	0.9
Asian/PI	47	3,858	3.1	2.2	4.3
Other	0	0	0.0	--	--
Maternal Education					
<HS	224	19,272	15.5	13.5	17.8
HS/GED	485	41,746	33.6	30.9	36.5
Some College	395	29,309	23.6	21.3	26.1
College+	436	33,832	27.3	24.8	29.8
Marital Status					
Married	1,000	80,140	63.3	60.4	66.1
Other	565	46,470	36.7	33.9	39.6
Pre-Pregnancy Insurance Status					
Private Insurance/HMO	1,033	83,142	65.8	63.0	68.5
Medicaid	240	19,208	15.2	13.2	17.4
Uninsured	289	24,082	19.1	16.8	21.5

2003 MI PRAMS

Table 2:
Prevalence of intended and unintended pregnancies,
2003 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Total	1,548	125,955	100.0	--	--
Intended	933	74,935	59.5	56.6	62.3
Unintended*	615	51,020	40.5	37.7	43.4

2003 MI PRAMS

*Unintended Pregnancy: Wanted to become pregnancy later or did not want to be pregnant at all

Table 3:
Prevalence of types of unintended pregnancies,
2003 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Total	615	51,020	100.0	--	--
Type of Unintended Pregnancy					
Mistimed*	464	37,877	74.2	69.9	78.1
Unwanted**	151	13,143	25.8	21.9	30.1

2003 MI PRAMS

*Mistimed: Wanted to become pregnant later

**Unwanted: Did not want to be pregnant then or in the future

Table 4:
Prevalence of contraceptive use and methods among unintended pregnancies,
2003 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Total	555	45,875	100.0	--	--
Contraceptive Use					
Yes	280	22,600	49.3	44.4	54.1
No	275	23,274	50.7	45.9	55.6
Contraceptive Method					
Condom	94	7,793	34.5	28.2	41.3
Withdrawal	68	5,510	24.4	19.0	30.7
Birth Control Pill	56	4,605	20.4	15.4	26.5
Other	35	2,883	12.8	8.9	18.1
Depo-Provera	17	1,119	5.0	2.8	8.5
Foam, cream, jelly	8	471	2.1	0.8	5.2
Sterilization (male)	1	DSU	DSU	DSU	DSU
Sterilization (female)	1	DSU	DSU	DSU	DSU
Norplant	0	--	--	--	--

2003 MI PRAMS

DSU: Data Statistically Unreliable

Table 5:
Prevalence of pregnancy intention by maternal demographic characteristics,
2003 MI PRAMS

	Intended Pregnancy					Unintended Pregnancy				
	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI	Sample Frequency (N)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Total	933	74,935	59.5	56.6	62.3	615	51,020	40.5	37.7	43.4
Maternal Age										
<18 yrs	7	652	13.3	6.0	27.0	45	4,238	86.7	73.0	94.0
18-19 yrs	22	1,885	27.3	17.4	40.1	56	5,029	72.7	60.0	82.6
20-24 yrs	156	12,592	41.2	35.5	47.2	225	17,949	58.8	52.8	64.5
25-29 yrs	315	26,013	68.4	63.3	73.1	151	12,020	31.6	26.9	36.7
30-34 yrs	271	21,499	72.7	67.0	77.8	93	8,060	27.3	22.2	33.0
35-39 yrs	130	10,344	77.1	68.8	83.8	38	3,067	22.9	16.2	31.2
40+ yrs	32	1,950	74.8	53.6	88.4	7	658	25.2	11.6	46.4
Race/Ethnicity										
White, Non-Hispanic	751	59,754	64.4	61.1	67.5	410	33,104	35.7	32.5	38.9
Black, Non-Hispanic	93	7,573	36.7	29.6	44.4	151	13,075	63.3	55.6	70.4
Hispanic	37	3,431	54.0	40.6	66.8	31	2,926	46.0	33.2	59.4
American Indian	4	DSU	DSU	DSU	DSU	2	DSU	DSU	DSU	DSU
Asian/PI	34	2,579	69.1	51.6	82.4	12	1,155	30.9	17.6	48.4
Maternal Education										
<HS	79	7,124	37.1	30.0	44.8	143	12,088	62.9	55.2	70.0
HS/GED	241	20,283	49.2	43.9	54.5	234	20,951	50.8	45.5	56.1
Some College	252	18,863	64.7	59.0	70.0	140	10,307	35.3	30.1	41.0
College+	343	26,584	79.2	74.5	83.3	89	6,964	20.8	16.7	25.5
Marital Status										
Married	757	60,746	76.4	73.2	79.4	232	18,740	23.6	20.6	26.8
Other	175	14,056	30.5	26.1	35.2	381	32,051	69.5	64.8	73.9
Pre-Pregnancy Insurance Status										
Private Insurance/HMO	732	58,338	70.7	67.4	73.9	290	24,149	29.3	26.1	32.7
Medicaid	86	6,869	35.9	29.0	43.5	151	12,247	64.1	56.5	71.0
Uninsured	113	9,585	40.1	33.7	47.0	172	14,292	59.9	53.0	66.3

2003 MI PRAMS

DSU: Data Statistically Unreliable

Table 6:
Prevalence of contraceptive use prior to pregnancy by maternal demographic characteristics, 2003 MI PRAMS

	Did Not Use Contraception					Used Contraception				
	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI	Sample Frequency (N)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Total	422	34,867	55.7	51.5	59.8	340	27,757	44.3	40.2	48.5
Maternal Age										
<18 yrs	25	2,435	56.5	40.2	71.5	21	1,874	43.5	28.5	59.8
18-19 yrs	35	3,276	53.0	40.1	65.6	35	2,901	47.0	34.4	59.9
20-24 yrs	145	11,458	56.0	48.7	63.0	114	9,017	44.0	37.0	51.3
25-29 yrs	116	8,856	55.9	47.7	63.8	84	6,992	44.1	36.2	52.3
30-34 yrs	63	6,053	59.2	48.7	68.9	53	4,179	40.8	31.1	51.3
35-39 yrs	26	1,949	45.2	30.6	60.7	29	2,362	54.8	39.3	69.4
40+ yrs	12	840	66.0	35.9	87.0	4	DSU	DSU	DSU	DSU
Race/Ethnicity										
White, Non-Hispanic	289	24,108	58.5	53.5	63.3	225	17,130	41.5	36.8	46.5
Black, Non-Hispanic	90	7,021	46.5	37.8	55.4	88	8,079	53.5	44.6	62.2
Hispanic	20	1,696	48.6	31.4	66.2	18	1,795	51.4	33.9	68.6
American Indian	11	1,060	78.17	47.6	93.4	3	DSU	DSU	DSU	DSU
Asian/PI	3	DSU	DSU	DSU	85.9	1	DSU	DSU	DSU	DSU
Maternal Education										
<HS	98	8,743	58.7	50.1	66.8	79	6,151	41.3	33.2	49.9
HS/GED	162	13,875	55.8	49.0	62.4	124	10,989	44.2	37.6	51.0
Some College	97	6,964	55.7	46.9	64.2	76	5,543	44.3	35.8	53.1
College+	54	4,480	48.7	38.4	59.1	58	4,721	51.3	40.9	61.6
Pre-Pregnancy Insurance Status										
Private Insurance/HMO	195	15,999	51.3	45.4	57.2	180	15,170	48.7	42.8	54.6
Medicaid	99	8,053	57.3	48.6	65.6	80	5,992	42.7	34.4	51.4
Uninsured	126	10,602	61.7	53.6	69.1	80	6,595	38.4	30.9	46.4

2003 MI PRAMS

DSU: Data Statistically Unreliable

Table 7:
Reasons for contraceptive nonuse prior to pregnancy,
2003 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Reasons					
Did not mind getting pregnant	182	14,212	38.5	33.4	43.8
Husband/partner did not want to use	98	8,920	24.1	19.7	29.2
Thought could not get pregnant	104	8,911	24.1	19.7	29.1
Other	80	7,072	19.1	15.2	23.7
Discontinued birth control because of side effects	53	4,846	13.1	9.8	17.3
Thought husband/partner sterile	40	2,822	7.6	5.3	10.8
Difficulty getting birth control	26	1,658	4.5	2.9	6.9

2003 MI PRAMS

Table 8:
Contraceptive method used prior to pregnancy,
2003 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Contraceptive Method					
Condom	185	15,359	51.4	45.4	57.1
Birth Control Pill	107	8,141	27.2	22.3	32.8
Withdrawal	93	7,767	26.1	21.1	31.7
Other	51	4,396	14.8	10.9	19.6
Foam, cream, jelly	21	1,756	5.9	3.6	9.6
Depo-Provera	20	1,308	4.4	2.6	7.2
Sterilization (male)	2	DSU	DSU	DSU	DSU
Sterilization (female)	1	DSU	DSU	DSU	DSU
Norplant	0	--	--	--	--

2003 MI PRAMS

Table 9:
Prevalence of contraceptive use postpartum by maternal demographic characteristics,
2003 MI PRAMS

	Did not use contraception					Used contraception				
	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI	Sample Frequency (N)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Total	237	18,250	14.5	12.6	16.7	1,319	107,532	85.5	83.3	87.4
Maternal Age										
<18 yrs	7	556	11.5	5.0	24.3	44	4,295	88.5	75.8	95.0
18-19 yrs	8	582	8.5	3.7	18.3	71	6,295	91.5	81.7	96.3
20-24 yrs	59	4,743	15.5	11.5	20.4	327	25,952	84.6	79.6	88.5
25-29 yrs	69	5,196	13.7	10.5	17.7	397	32,643	86.3	82.3	89.5
30-34 yrs	52	4,382	14.8	11.1	19.7	314	25,142	85.2	80.4	89.0
35-39 yrs	32	2,152	16.2	10.8	23.7	136	11,111	83.8	76.4	89.2
40+ yrs	10	639	23.4	11.0	43.0	30	2,094	76.6	57.1	89.0
Race/Ethnicity										
White, Non-Hispanic	172	13,027	14.0	11.9	16.5	998	79,898	86.0	83.5	88.1
Black, Non-Hispanic	38	2,945	14.5	9.8	20.9	205	17,395	85.5	79.1	90.2
Hispanic	11	1,001	15.8	8.2	28.4	56	5,328	84.2	71.6	91.8
Asian/PI	11	990	26.2	14.1	43.3	35	2,793	73.8	56.7	85.9
American Indian	2	DSU	DSU	DSU	DSU	4	DSU	DSU	DSU	DSU
Maternal Education										
<HS	34	2,679	14.4	9.7	20.8	183	15,906	85.6	79.2	90.3
HS/GED	72	5,732	13.9	10.6	18.0	410	35,607	86.1	82.0	89.4
Some College	60	4,326	14.8	11.1	19.4	334	24,935	85.2	80.6	88.9
College+	66	5,170	15.3	11.8	19.6	369	28,615	84.7	80.4	88.2
Prenatal Contraception Counseling										
Talked to HCW	165	12,892	13.0	10.9	15.4	1,056	86,281	87.0	84.6	89.1
Did not talk to HCW	68	5,021	20.6	15.8	26.4	237	19,370	79.4	73.6	84.2

2003 MI PRAMS

Discussed contraception with a doctor, nurse, or other health professional during prenatal care visit. Does not include educational literature or videos.

DSU: Data Statistically Unreliable

Table 10:
Reasons for contraceptive nonuse postpartum,
2003 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Reasons					
Did not want to use birth control	73	5,663	29.4	23.2	36.5
Other	62	4,515	23.4	17.8	30.2
Want to get pregnant	57	4,095	21.3	15.8	28.0
Not having sex	54	3,863	20.0	14.8	26.5
Husband/partner does not want to use	39	3,240	16.9	11.9	23.4
Cannot afford birth control	21	1,936	10.0	6.1	16.0
Pregnant now	12	858	4.5	2.3	8.6
Believe cannot get pregnant	12	438	2.3	1.1	4.6

2003 MI PRAMS

Table 11:
Prevalence of infant birthweight,
2003 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Prevalence by LBW					
Total	1,568	126,972			
NBW	1,145	117,727	92.7	92.3	93.2
LBW*	423	9,245	7.3	6.8	7.8
Prevalence by LBW Type					
Total	423	9,245			
mLBW**	346	7,548	81.7	77.6	85.1
vLBW***	77	1,697	18.4	14.9	22.4

2003 MI PRAMS

*LBW: Birthweight below 2500 grams

**Birthweight between 1500 to 2500 grams

***Birthweight below 1500 grams

Table 12:
Prevalence of birthweight by pregnancy intention,
2003 MI PRAMS

	Low Birthweight					Normal Birthweight				
	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI	Sample Frequency (N)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Unintended Pregnancy										
Total	414	9,027				1,134	116,928			
Unintended	178	4,186	8.2	7.1	9.5	437	46,834	91.8	90.6	92.9
Intended	236	4,841	6.5	5.8	7.2	697	70,094	93.5	92.8	94.2
Unintended Pregnancy Type										
Total	178	4,186				437	46,834			
Mistimed	138	3,196	8.4	7.1	10.0	326	34,680	91.6	90.0	92.9
Unwanted	40	990	7.5	5.4	10.4	111	12,154	92.5	89.6	94.6

2003 MI PRAMS

Table 13:
Infant birthweight by maternal demographic characteristics,
2003 MI PRAMS

	Low Birthweight					Normal Birthweight				
	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI	Sample Frequency (N)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Total	423	9,245	7.3	6.8	7.8	1,145	117,727	92.7	92.3	93.2
Age										
<18 yrs	14	393	8.0	4.5	14.0	38	4,497	92.0	86.0	95.5
18-19 yrs	26	700	10.0	6.5	15.0	55	6,333	90.1	85.0	93.5
20-24 yrs	117	2,635	8.5	7.1	10.3	271	28,253	91.5	89.7	92.9
25-29 yrs	106	2,312	6.0	5.0	7.3	364	35,949	94.0	92.7	95.0
30-34 yrs	93	1,827	6.1	5.0	7.5	275	27,911	93.9	92.5	95.0
35-39 yrs	52	1,077	8.0	5.9	10.8	117	12,352	92.0	89.2	94.1
40+ yrs	15	300	11.0	6.1	19.0	25	2,432	89.0	81.0	93.9
Race/Ethnicity										
White, Non-Hispanic	286	5,777	6.2	5.6	6.8	892	87,903	93.8	93.2	94.4
Black, Non-Hispanic	105	2,791	13.5	11.0	16.5	140	17,881	86.5	83.5	89.0
Hispanic	12	283	4.5	2.4	8.0	56	6,074	95.6	92.0	97.6
Asian/PI	9	156	4.1	2.0	8.0	38	3,702	96.0	92.0	98.0
American Indian	3	DSU	DSU	DSU	DSU	3	DSU	DSU	DSU	DSU
Maternal Education										
<HS	75	1,905	9.9	7.7	12.6	149	17,368	90.1	87.4	92.3
HS/GED	140	3,190	7.6	6.5	9.0	345	38,556	92.4	91.0	93.5
Some College	96	1,981	6.8	5.5	8.3	299	27,327	93.2	91.7	94.5
College+	101	1,872	5.5	4.6	6.7	335	31,960	94.5	93.3	95.4
Marital Status										
Married	229	4,482	5.6	5.0	6.2	771	75,658	94.4	93.8	95.0
Other	194	4,763	10.3	8.9	11.8	371	41,707	89.8	88.2	91.1
Pre-Pregnancy Insurance Status										
Private Insurance/HMO	250	5,154	6.2	5.6	6.9	783	77,988	93.8	93.1	94.4
Medicaid	85	2,111	11.0	8.7	13.8	155	17,097	89.0	86.2	91.3
Uninsured	86	1,942	8.1	6.4	10.1	203	22,140	91.9	89.9	93.6

2003 MI PRAMS

Table 14:
Prevalence of low birthweight by gestational age,
2003 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Total	423	9,245	7.3	6.8	7.8
Gestational Age					
Pre-term infant*	304	6,607	48.5	41.8	55.2
Term infant**	119	2,638	2.3	2.0	2.8

2003 MI PRAMS

*Pre-term infant: Gestational age < 37 weeks

**Term infant: Gestational age >= 37 weeks

Table 15:
Trimester of entry into prenatal care,
2003 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Total	1,555	126,068			
Entry into Prenatal Care					
1st trimester	1,256	101,152	80.2	77.8	82.5
2nd trimester	259	21,685	17.2	15.1	19.5
3rd trimester	21	1,877	1.5	0.9	2.4
No PNC	19	1,353	1.1	0.6	1.9

2003 MI PRAMS

Table 16:
Trimester of entry into prenatal care by maternal demographic characteristics,
2003 MI PRAMS

	1st Trimester					After 1st Trimester/Not at all				
	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI	Sample Frequency (N)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Total	1,256	101,152	80.2	77.8	82.5	299	24,915	19.76	16.6	23.8
Maternal Age										
<18 yrs	25	2,380	49.4	34.5	64.5	26	2,434	50.6	35.5	65.5
18-19 yrs	55	5,042	71.9	59.9	81.5	25	1,969	28.1	18.6	40.1
20-24 yrs	279	21,582	70.2	64.3	75.4	107	9,183	29.9	24.6	35.7
25-29 yrs	390	31,701	83.4	79.1	87.0	76	6,300	16.6	13.0	20.9
30-34 yrs	324	26,007	88.7	84.3	92.0	39	3,307	11.3	8.0	15.7
35-39 yrs	147	11,897	88.6	81.8	93.1	22	1,532	11.4	6.9	18.2
40+ yrs	36	2,542	93.0	80.0	97.8	4	DSU	DSU	DSU	DSU
Race/Ethnicity										
White, Non-Hispanic	977	77,300	83.1	80.4	85.4	191	15,763	16.9	14.6	19.6
Black, Non-Hispanic	172	14,658	71.3	64.0	77.7	71	5,891	28.7	22.3	36.0
Hispanic	46	4,178	65.7	52.0	77.2	22	2,180	34.3	22.8	48.0
Asian/PI	37	2,993	81.1	65.1	90.7	9	700	18.95	9.3	34.9
American Indian	4	DSU	DSU	DSU	DSU	2	DSU	DSU	DSU	DSU
Maternal Education										
<HS	129	10,922	57.7	49.9	65.1	91	8,011	42.3	34.9	50.1
HS/GED	369	31,868	76.3	71.6	80.5	116	9,878	23.7	19.5	28.4
Some College	328	24,332	84.1	79.5	87.8	62	4,595	15.9	12.2	20.5
College+	405	31,339	93.1	89.8	95.4	27	2,309	6.9	4.6	10.2
Pre-Pregnancy Insurance Status										
Private Insurance/HMO	909	73,560	89.0	86.7	91.0	116	9,065	11.0	9.0	13.4
Medicaid	155	12,105	64.1	56.5	71.0	81	6,792	35.9	29.0	43.6
Uninsured	187	15,113	63.0	56.1	69.3	101	8,893	37.1	30.7	43.9

2003 MI PRAMS

DSU: Data Statistically Unreliable

Table 17:
Trimester of entry into prenatal care by pregnancy intention,
2003 MI PRAMS

	1st Trimester					After 1st Trimester/Not at all				
	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI	Sample Frequency (N)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Intended	815	64,695	87.1	84.3	89.5	109	9,601	12.9	10.5	15.8
Unintended	427	35,704	70.4	66.0	74.4	184	15,051	29.7	25.6	34.1
										2003 MI PRAMS

Table 18:
Satisfaction with trimester of entry into prenatal care,
2003 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Total	1,548	125,124	100.0		
Satisfaction with Time of Entry					
No	276	22,902	18.3	16.1	20.7
Yes	1,272	102,222	81.7	79.3	83.9
					2003 MI PRAMS

Table 19:
Number of barriers to care experienced by women who were not satisfied with the trimester of entry into prenatal care,
2003 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Total	267	21,903	100.0		
Number of Barriers					
1 barrier	174	14,502	65.4	58.5	71.8
2 barriers	59	4,970	22.4	17.1	28.8
3 barriers	21	1,583	7.1	4.2	11.8
4 barriers	11	848	3.8	1.9	7.5
5 barriers	2	DSU	DSU	DSU	DSU
6 barriers	0	--	--	--	--

2003 MI PRAMS

Table 20:
Types of barriers to care experienced by women who were not satisfied with the trimester of entry into prenatal care,
2003 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Types of Barriers					
Could not get earlier appointment	104	8,996	37.6	31.2	44.4
Unaware of pregnancy	102	8,196	34.3	28.2	41.0
Could not pay for appointment	57	4,786	20.0	15.0	26.1
Doctor/HMO would not start care earlier	41	3,651	15.3	11.0	20.9
Other	38	3,324	13.9	9.9	19.2
Too much going on	26	2,324	9.7	6.3	14.7
Did not have Medicaid Card	25	1,954	8.2	5.2	12.7
No transportation	15	1,019	4.3	2.2	8.0
No child care	8	782	3.3	1.5	7.0

2003 MI PRAMS

Table 21:
Prevalence of prenatal care providers,
2003 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Total	1,477	119,878	100.0		
Prenatal Care Providers					
Hospital Clinic	253	20,865	17.4	15.2	19.8
Health Dept. Clinic	59	5,323	4.4	3.3	5.9
MD/HMO	1,165	93,691	78.2	75.6	80.6

2003 MI PRAMS

Table 22:
Sources of payment for prenatal care,
2003 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Sources of Payment					
Private Insurance	1,006	80,464	64.1	61.2	66.8
Medicaid	594	48,390	38.5	35.7	41.4
Personal Income	190	14,761	11.8	10.1	13.7
Other	38	2,928	2.3	1.6	3.4

2003 MI PRAMS

Table 23:
Topics discussed during any prenatal care visit (literature and videos excluded),
2003 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Topics Discussed					
Safe Medications	1,381	111,886	89.6	87.7	91.3
Screening for Birth Defects	1,337	107,819	86.8	84.6	88.6
Early Labor	1,282	106,899	86.1	84.0	88.0
HIV/AIDS Test	1,318	106,385	85.4	83.2	87.3
Breastfeeding	1,253	101,170	81.1	78.7	83.2
Postpartum Contraception	1,230	100,025	80.2	77.8	82.4
Smoking during Pregnancy	1,094	86,626	69.4	66.7	72.0
Alcohol Consumption during Pregnancy	1,079	86,193	69.3	66.5	71.9
Illegal Drug Use during Pregnancy	955	75,634	60.9	58.0	63.7
Seatbelt Use	774	61,386	49.3	46.4	52.2
Domestic Abuse	641	51,412	41.5	38.6	44.4

2003 MI PRAMS

Table 24:
Breastfeeding intention prior to delivery,
2003 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Total	1,487	122,119	100.0		
Plan					
Planned to breastfeed	826	68,111	55.8	52.8	58.7
May Breastfeed	286	22,781	18.7	16.5	21.1
Planned not to breastfeed	330	27,871	22.8	20.4	25.4
Unsure about breastfeeding	45	3,356	2.8	1.9	3.9

2003 MI PRAMS

Table 25:
Breastfeeding initiation,
2003 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Total	1,488	121,993	100.0		
Breastfeeding Initiation					
Yes	1,039	83,602	68.5	65.7	71.2
No	449	38,391	31.5	28.8	34.3

2003 MI PRAMS

Table 26:
Breastfeeding duration,
2003 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Total	1,481	121,418	100.0		
Breastfeeding Duration					
Did not breastfeed	449	38,391	31.6	28.9	34.5
Breastfed for <1 week	55	4,700	3.9	2.9	5.2
Breastfed for >1 week, but concluded	520	40,264	33.2	30.5	36.0
Breastfeeding when surveyed	457	38,063	31.4	28.7	34.1

2003 MI PRAMS

Table 27a:
Prevalence of breastfeeding duration by maternal demographic characteristics,
2003 MI PRAMS

	Did not breastfeed					Breastfed for <1 week				
	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI	Sample Frequency (N)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Total	449	38,391	100.0			55	4,700	100.0		
Age										
<18 yrs	28	2,789	61.1	45.2	75.0	2	DSU	DSU	DSU	DSU
18-19 yrs	40	3,461	49.7	37.5	61.9	3	DSU	DSU	DSU	DSU
20-24 yrs	131	11,262	37.9	32.2	44.0	17	1,370	4.6	2.6	8.0
25-29 yrs	119	9,629	26.6	22.1	31.7	16	1,458	4.0	2.3	6.9
30-34 yrs	77	6,908	23.9	19.0	29.6	13	1,005	3.5	1.9	6.4
35-39 yrs	45	3,774	30.1	22.2	39.2	3	DSU	DSU	DSU	DSU
40+ yrs	9	567	22.5	10.0	43.0	1	DSU	DSU	DSU	DSU
Race/Ethnicity										
White, Non-Hispanic	316	27,597	30.5	27.4	33.7	40	3,464	3.8	2.7	5.4
Black, Non-Hispanic	108	8,833	46.1	38.3	54.1	12	995	5.2	2.6	10.1
Hispanic	16	1,422	25.1	14.7	39.4	2	DSU	DSU	DSU	DSU
Asian/PI	3	DSU	DSU	DSU	DSU	0	-	-	-	-
American Indian	1	DSU	DSU	DSU	DSU	0	-	-	-	-
Education										
<HS	117	10,751	60.7	52.8	68.1	8	753	4.3	2.0	9.0
HS/GED	188	16,680	41.6	36.4	47.0	18	1,585	4.0	2.3	6.8
Some College	91	6,532	23.2	18.7	28.5	16	1,171	4.2	2.4	7.2
College+	45	3,760	11.5	8.4	15.5	11	1,001	3.1	1.6	5.8
Marital Status										
Married	183	15,641	20.3	17.5	23.6	31	2,708	3.5	2.4	5.2
Other	264	22,482	50.9	45.9	55.9	24	1,992	4.5	2.8	7.2

2003 MI PRAMS

DSU: Data Statistically Unreliable

Table 27b:
Prevalence of breastfeeding duration by maternal demographic characteristics,
2003 MI PRAMS

	Breastfed for >1 week, but concluded					Breastfeeding when surveyed				
	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI	Sample Frequency (N)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Total	520	40,264	100.0			457	38,063	100.0		
Age										
<18 yrs	15	1,232	27.0	15.7	42.4	3	DSU	DSU	DSU	DSU
18-19 yrs	25	2,034	29.2	19.3	41.6	10	1,192	17.1	9.4	29.0
20-24 yrs	154	11,525	38.8	33.1	44.8	65	5,574	18.8	14.5	24.0
25-29 yrs	152	12,395	34.2	29.4	39.5	157	12,722	35.1	30.3	40.3
30-34 yrs	122	9,626	33.4	27.9	39.2	141	11,329	39.2	33.6	45.2
35-39 yrs	39	2,552	20.3	14.0	28.5	69	5,927	47.2	38.2	56.3
40+ yrs	13	900	35.7	19.6	55.8	12	932	36.9	20.5	57.1
Race/Ethnicity										
White, Non-Hispanic	397	29,754	32.9	29.8	36.1	372	29,691	32.8	29.8	36.0
Black, Non-Hispanic	62	5,440	28.4	21.9	36.2	39	3,888	20.3	14.5	27.6
Hispanic	25	2,320	40.9	28.0	55.1	18	1,860	32.8	20.9	47.4
Asian/PI	20	1,407	38.2	23.9	54.8	22	2,119	57.5	40.9	72.5
American Indian	2	DSU	DSU	DSU	DSU	2	DSU	DSU	DSU	DSU
Education										
<HS	63	4,915	27.8	21.4	35.1	14	1,289	7.3	4.1	12.7
HS/GED	165	13,063	32.6	32.6	37.7	86	8,790	21.9	17.8	26.7
Some College	144	10,949	38.9	33.4	44.8	124	9,482	33.7	28.5	39.3
College+	138	9,943	30.4	25.6	35.6	228	18,038	55.1	49.6	60.4
Marital Status										
Married	346	26,226	34.1	30.8	37.6	394	32,316	42.0	38.5	45.6
Other	174	14,038	31.8	27.3	36.6	62	5,652	12.8	9.8	16.6

2003 MI PRAMS

DSU: Data Statistically Unreliable

Table 28:
Average breastfeeding duration, in weeks, among women who breastfed for longer than 1 week, but had discontinued before being surveyed,
2003 MI PRAMS

	Breastfed for >1 week, but concluded				
	Sample Frequency (n)	**Weighted Frequency (N)**	**Average (weeks)**	**LCI**	**UCI**
Total	520	40,264			
Age					
<18 yrs	15	1,232	6.9	2.4	11.3
18-19 yrs	25	2,034	6.1	3.2	9.1
20-24 yrs	154	11,525	7.0	6.1	7.9
25-29 yrs	152	12,395	7.2	6.3	8.2
30-34 yrs	122	9,626	7.4	6.4	8.4
35-39 yrs	39	2,552	8.6	6.5	10.7
40+ yrs	13	900	12.7	8.6	16.9
Race/Ethnicity					
White, Non-Hispanic	397	29,754	7.6	7.0	8.2
Black, Non-Hispanic	62	5,440	7.0	5.3	8.7
Hispanic	25	2,320	6.0	4.2	7.8
Asian/PI	20	1,407	7.5	5.6	9.5
American Indian	2	DSU	DSU	DSU	DSU
Education					
<HS	63	4,915	5.5	3.9	7.0
HS/GED	165	13,063	7.0	6.0	7.9
Some College	144	10,949	7.1	6.3	8.0
College+	138	9,943	8.6	7.5	9.7
Marital Status					
Married	346	26,226	7.6	7.0	8.2
Other	174	14,038	6.9	5.9	8.0

2003 MI PRAMS

Table 29:
Barriers to breastfeeding initiation among women who did not breastfeed,
2003 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Barriers					
Did not like breastfeeding	191	17,262	41.7	36.6	46.7
Other	167	12,731	30.6	26.2	35.5
Had to return to work/school	132	11,617	28.0	23.6	32.8
Other children to care for	130	11,047	26.6	22.3	31.4
Too many household duties	83	7,139	17.2	13.6	21.5
Mother wanted body back	70	6,852	16.5	12.9	20.9
Mother did not want to be tied down	63	5,562	13.4	10.3	17.2
Too embarrassed to breastfeed	47	4,558	11.0	8.1	14.7
Husband/partner discouraged breastfeeding	15	1,660	4.0	2.3	6.8

2003 MI PRAMS

Table 30:
Barriers to breastfeeding continuation among women who had discontinued breastfeeding before being surveyed,
2003 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Barriers					
Breastmilk did not satisfy infant	183	16,132	32.9	28.7	37.5
Thought was not producing enough milk	208	15,717	32.0	27.8	36.5
Infant had difficulty nursing	167	12,945	26.4	22.5	30.6
Had to return to work/school	157	12,801	26.1	22.3	30.3
Other	166	11,651	23.7	20.0	27.8
Nipples became sore, cracked, or bleeding	114	10,651	21.7	18.0	25.9
Felt it was time to discontinue	88	7,720	15.7	12.6	19.4
Needed another person to feed the infant	84	6,859	14.2	11.2	17.7
Too many household duties	83	6,297	12.8	10.1	16.2
Thought infant was not gaining enough weight	41	3,601	7.3	5.2	10.3
Mother became sick and could not nurse	28	2,215	4.5	3.0	6.8
Infant became sick and could not nurse	25	1,765	3.6	2.3	5.7
Husband/partner discouraged breastfeeding	11	786	1.6	0.8	3.2

2003 MI PRAMS

Table 31:
Smoking status during pregnancy (compared with pre-pregnancy smoking),
2003 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Total	1,532	124,403	100.0		
Smoking Status					
Nonsmoker	1,086	90,105	72.3	69.7	74.8
Smoker who quit	182	15,163	12.2	10.4	14.2
Smoker (reduced # of cigarettes)	190	14,429	11.6	9.9	13.6
Smoker (same # of cigarettes)	71	4,706	3.8	2.9	5.0
Nonsmoker Resumed	3	DSU	DSU	DSU	DSU

2003 MI PRAMS

DSU: Data statistically unreliable

Table 32:
Smoking status in the last three months of pregnancy,
2003 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Total	1,546	125,451	100.0		
Smoking Status					
Smoked	268	19,569	15.6	13.6	17.8
Did not smoke	1,278	105,881	84.4	82.2	86.4

2003 MI PRAMS

Table 33:
Smoking status in the last three months of pregnancy by maternal demographic characteristics, 2003 MI PRAMS

	Did not smoke					Smoked				
	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI	Sample Frequency (N)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Total	1,278	105,881	100.0			268	19,569	100.0		
Age										
<18 yrs	42	4,016	83.4	68.9	92.0	9	798	16.6	8.0	31.1
18-19 yrs	53	4,505	66.3	53.7	77.0	26	2,286	33.7	23.0	46.3
20-24 yrs	291	23,754	77.6	72.3	82.1	94	6,871	22.4	18.0	27.7
25-29 yrs	403	34,115	89.9	86.6	92.5	60	3,820	10.1	7.5	13.5
30-34 yrs	310	25,405	86.5	81.8	90.1	54	3,964	13.5	9.9	18.2
35-39 yrs	147	11,735	88.2	80.8	93.0	19	1,567	11.8	7.0	19.2
40+ yrs	32	2,351	90.0	75.9	96.2	6	262	10.0	3.8	24.2
Race/Ethnicity										
White, Non-Hispanic	950	77,102	83.0	80.4	85.3	215	15,819	17.0	14.7	19.7
Black, Non-Hispanic	204	17,598	87.5	81.6	91.7	34	2,520	12.5	8.3	18.4
Hispanic	57	5,549	90.3	80.3	95.5	9	599	9.8	4.5	19.7
Asian/PI	46	3,811	98.8	91.9	99.8	1	DSU	DSU	DSU	DSU
American Indian	3	DSU	DSU	DSU	DSU	3	DSU	DSU	DSU	DSU
Education										
<HS	141	13,186	70.8	63.6	77.2	75	5,429	29.2	22.8	36.4
HS/GED	363	32,344	78.1	73.5	82.1	115	9,062	21.9	17.9	26.5
Some College	335	25,076	86.1	81.7	89.6	57	4,045	13.9	10.4	18.3
College+	417	32,905	98.2	96.4	99.1	16	612	1.8	0.9	3.6
Medicaid Status										
Medicaid Ever	444	37,993	72.5	68.4	76.3	196	14,402	27.5	23.7	31.6
Medicaid Never	828	67,629	93.0	90.8	94.8	71	5,072	7.0	5.3	9.2

2003 MI PRAMS

DSU: Data Statistically Unreliable

Table 34:
Infant birthweight by maternal smoking status in the last three months of pregnancy,
2003 MI PRAMS

	Low Birthweight					Normal Birthweight				
	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI	Sample Frequency (N)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Total	423	9,245	7.3	6.8	7.8	1,145	117,727	92.7	92.3	93.2
Smoking Status										
Did not Smoke	313	6,857	6.5	5.9	7.1	965	99,024	93.5	92.9	94.1
Smoked	100	2,169	11.1	9.0	13.7	168	17,401	88.9	86.4	91.1

2003 MI PRAMS

Table 35:
Smoking status in the postpartum period
(compared with pre-pregnancy smoking),
2003 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Total	1,527	124,184	100.0		
Smoking Status					
Nonsmoker	1,082	89,580	72.1	69.5	74.7
Smoker who quit	92	6,826	5.5	4.3	7.0
Smoker (reduced # of cigarettes)	153	11,906	9.6	8.0	11.5
Smoker (same # of cigarettes)	194	15,250	12.3	10.5	14.3
Nonsmoker who began smoking	6	623	0.5	0.2	1.2

2003 MI PRAMS

Table 36:
Smoking status in the postpartum period
(compared with pregnancy smoking),
2003 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Total	1,537	124,616	100.0		
Smoking Status					
Nonsmoker	1,165	95,751	76.8	74.3	79.2
Smoker who quit	14	861	0.7	0.4	1.3
Smoker (reduced # of cigarettes)	18	1,120	0.9	0.5	1.5
Smoker (same # of cigarettes)	233	17,357	13.9	12.1	16.1
Nonsmoker who began smoking	107	9,527	7.7	6.2	9.4

2003 MI PRAMS

Table 37:
Alcohol consumption during pregnancy
(compared with pre-pregnancy drinking),
2003 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Total	1,526	122,759	100.0		
Alcohol Consumption					
Nondrinker	674	55,538	45.1	42.2	48.0
Drinker who quit	768	59,849	48.6	45.7	51.5
Drinker (reduced # of drinks)	43	3,833	3.1	2.2	4.3
Drinker (# of drinks same or more)	37	3,541	2.9	2.0	4.1
Nondrinker who began drinking	4	DSU	DSU	DSU	DSU

2003 MI PRAMS

Table 38:
Prevalence of infant sleep position,
2003 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Total	1,437	117,978	100.0		
Sleep Position					
Supine/Back	1,037	85,126	72.2	69.4	74.8
Prone/Stomach	200	16,197	13.7	11.8	15.9
Side	200	16,655	14.1	12.1	16.4

2003 MI PRAMS

Table 39a:
Prevalence of infant sleep position by maternal demographic characteristics,
2003 MI PRAMS

	Supine/Back					Side				
	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI	Sample Frequency (N)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Total	1,037	85,126	100.0			200	16,655	100.0		
Age										
<18 yrs	24	2,307	54.6	38.2	70.1	10	1,002	23.7	12.3	40.8
18-19 yrs	43	4,067	62.8	49.7	74.3	17	1,525	23.5	14.2	36.5
20-24 yrs	253	19,614	69.9	63.8	75.4	49	4,960	17.7	13.2	23.2
25-29 yrs	309	26,423	74.1	69.2	78.5	64	4,532	12.7	9.6	16.6
30-34 yrs	278	23,141	81.1	76.0	85.4	34	2,642	9.3	6.4	13.3
35-39 yrs	104	7,750	61.9	52.5	70.5	22	1,762	14.1	8.7	21.9
40+ yrs	26	1,823	72.3	51.9	86.3	4	DSU	DSU	DSU	DSU
Race/Ethnicity										
White, Non-Hispanic	828	66,483	74.7	71.7	77.5	142	11,833	13.3	11.1	15.8
Black, Non-Hispanic	113	10,463	58.2	49.8	66.1	38	3,248	18.1	12.5	25.4
Hispanic	41	3,755	69.3	54.3	81.0	8	711	13.1	6.1	26.0
Asian/PI	34	2,696	76.6	59.7	87.8	9	701	19.9	9.8	36.3
American Indian	3	DSU	DSU	DSU	DSU	0	--	--	--	--
Education										
<HS	117	10,852	65.7	57.5	73.0	35	2,955	17.9	12.5	25.0
HS/GED	317	28,119	73.4	68.2	78.0	60	5,842	15.3	11.6	19.8
Some College	260	19,501	70.2	64.5	75.3	61	4,399	15.8	12.0	20.6
College+	327	24,754	75.5	70.4	79.9	41	3,227	9.8	7.0	13.6
Medicaid Status										
Medicaid Ever	388	32,515	67.5	62.8	71.8	96	8,317	17.3	13.9	21.2
Medicaid Never	646	52,475	75.5	72.0	78.7	102	8,195	11.8	9.5	14.5

2003 MI PRAMS

DSU: Data Statistically Unreliable

Table 39b:
Prevalence of infant sleep position by maternal demographic characteristics, 2003 MI PRAMS

	Prone/Stomach				
	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Total	200	16,197	100.0		
Age					
<18 yrs	10	916	21.7	11.0	38.2
18-19 yrs	12	885	13.7	7.2	24.5
20-24 yrs	47	3,473	12.4	8.8	17.1
25-29 yrs	63	4,704	13.2	10.0	17.2
30-34 yrs	34	2,740	9.6	6.6	13.8
35-39 yrs	29	3,011	24.0	16.8	33.1
40+ yrs	5	468	18.6	7.4	39.3
Race/Ethnicity					
White, Non-Hispanic	138	10,668	12.0	10.0	14.3
Black, Non-Hispanic	50	4,265	23.7	17.4	31.5
Hispanic	9	955	17.6	8.8	32.2
Asian/PI	1	DSU	DSU	DSU	DSU
American Indian	1	DSU	DSU	DSU	DSU
Education					
<HS	35	2,716	16.4	11.3	23.4
HS/GED	59	4,359	11.4	8.4	15.2
Some College	46	3,883	14.0	10.3	18.8
College+	55	4,823	14.7	11.1	19.2
Medicaid Status					
Medicaid Ever	95	7,356	15.3	12.2	19.0
Medicaid Never	105	8,841	12.7	10.3	15.6

2003 MI PRAMS

DSU: Data Statistically Unreliable

Table #40:
Prevalence of infant bed sharing,
2003 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Total	1,568	126,972	100.0		
Bed Sharing					
Never Sleeps Alone	305	23,046	18.2	16.0	20.5
Sometimes Sleeps Alone	268	21,250	16.7	14.7	19.0
Always Sleeps Alone	995	82,676	65.1	62.3	67.8

2003 MI PRAMS

Table 41a:
Prevalence of infant bed sharing by maternal demographic characteristics,
2003 MI PRAMS

	Never Sleeps Alone					Sometimes Sleeps Alone				
	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI	Sample Frequency (N)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Total	305	23,046	100.0				268	21250	100.0	
Age										
<18 yrs	15	1,638	33.5	20.6	49.5	10	849	17.4	8.7	31.8
18-19 yrs	24	1,900	27.0	17.4	39.4	16	1,261	17.9	10.5	28.9
20-24 yrs	84	6,163	20.0	15.7	25.1	77	6,065	19.6	15.4	24.7
25-29 yrs	77	5,701	14.9	11.6	19.0	77	6,171	16.1	12.7	20.3
30-34 yrs	62	4,726	15.9	12.0	20.7	59	5,104	17.2	13.1	22.2
35-39 yrs	35	2,429	18.1	12.4	25.7	23	1,454	10.8	6.7	17.1
40+ yrs	8	490	17.9	7.3	37.6	6	346	12.7	4.5	30.9
Race/Ethnicity										
White, Non-Hispanic	164	11,765	12.6	10.6	14.9	182	14,366	15.3	13.2	17.8
Black, Non-Hispanic	100	7,868	38.1	31.0	45.7	54	4,237	20.5	15.0	27.3
Hispanic	20	1,863	29.3	18.8	42.7	10	874	13.8	6.9	25.5
Asian/PI	18	1,489	38.6	24.3	55.1	14	1,128	29.2	16.8	45.8
American Indian	1	DSU	DSU	DSU	DSU	3	DSU	DSU	DSU	DSU
Education										
<HS	64	5,498	28.5	22.1	35.9	44	3,712	19.3	13.9	26.0
HS/GED	99	7,559	18.1	14.5	22.4	70	5,368	12.9	9.8	16.7
Some College	75	5,297	18.1	14.0	23.0	75	6,000	20.5	25.5	25.5
College+	59	4,225	12.5	9.4	16.4	74	5,723	16.9	13.3	21.3
Insurance Status										
Medicaid Ever	151	11,814	22.1	18.6	26.1	114	9,284	17.4	14.2	21.1
Medicaid Never	152	11,155	15.2	12.7	18.1	153	11,842	16.2	13.7	19.1

2003 MI PRAMS

DSU: Data Statistically Unreliable

Table 41b:
Prevalence of infant bed sharing by maternal demographic characteristics, 2003 MI PRAMS

	Always Sleeps Alone				
	Sample Frequency (N)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Total	995	82,676	100.0		
Age					
<18 yrs	27	2,403	49.1	34.4	64.0
18-19 yrs	41	3,873	55.1	42.8	66.8
20-24 yrs	227	18,660	60.4	54.5	66.0
25-29 yrs	316	26,390	69.0	64.0	73.6
30-34 yrs	247	19,907	66.9	61.1	72.3
35-39 yrs	111	9,546	71.1	62.7	78.2
40+ yrs	26	1,896	69.4	49.7	83.9
Race/Ethnicity					
White, Non-Hispanic	832	67,548	72.1	69.1	74.9
Black, Non-Hispanic	91	8,567	41.4	34.1	49.2
Hispanic	38	3,620	57.0	43.5	69.4
Asian/PI	15	1,242	32.2	19.0	49.0
American Indian	2	DSU	DSU	DSU	DSU
Education					
<HS	116	10,063	52.2	44.6	59.7
HS/GED	316	28,819	69.0	64.1	73.6
Some College	245	18,012	61.5	55.7	66.9
College+	303	23,884	70.6	65.5	75.2
Insurance Status					
Medicaid Ever	388	32,314	60.5	56.0	64.8
Medicaid Never	603	50,207	68.6	65.0	71.9

2003 MI PRAMS

DSU: Data Statistically Unreliable

Table 42:
Prevalence of physical abuse prior to pregnancy,
2003 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Total	1,566	126,682			
Physically Abused					
Not Abused	1,479	119,579	94.4	92.9	95.6
Abused	87	7,103	5.6	4.4	7.1

2003 MI PRAMS

Table 43:
Person inflicting abuse among women abused prior to pregnancy,
2003 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Total	87	7,103	100.0		
Abuser					
Abused by husband/partner	66	5,276	74.3	61.8	83.8
Abused by someone else	21	1,827	25.7	16.2	38.2

2003 MI PRAMS

Table 44:
Prevalence of physical abuse during pregnancy,
2003 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Total	1,563	126,316	100.0		
Physically Abused					
Not Abused	1,508	121,959	96.6	95.3	97.5
Abused	55	4,357	3.5	2.5	4.7

2003 MI PRAMS

Table 45:
Person inflicting abuse among women abused during pregnancy,
2003 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Total	55	4,357	100.0		
Abuser					
Abused by husband/partner	46	3,744	85.9	71.6	93.7
Abused by someone else	9	613	14.1	6.3	28.4

2003 MI PRAMS

Table 46:
Prevalence of verbal abuse in the year prior to delivery,
2003 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Total	1,553	125,357	100.0		
Verbally Abused					
Not Verbally Abused	1,459	117,431	93.7	92.1	95.0
Verbally Abused	94	7,926	6.3	5.0	7.9

2003 MI PRAMS

Table 47:
Prevalence of women hearing or reading about folic acid and its benefits,
2003 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Total	1,476	119,174	100.0		
Heard/read about folic acid					
Yes	1,174	94,693	79.5	76.9	81.8
No	302	24,481	20.5	18.2	23.1

2003 MI PRAMS

Table 48:
Prevalence of women instructed, by a health care professional on the appropriate amount of folic acid to consume,
2003 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Total	1,479	118,761	100.0		
Instructed by healthcare professional					
Yes	952	76,513	64.4	61.5	67.2
No	527	42,248	35.6	32.8	38.5

2003 MI PRAMS

Table 49:
Prevalence of multivitamin consumption in the month prior to pregnancy,
2003 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Total	1,555	125,768	100.0		
Multivitamin Consumption					
No multivitamin	826	67,549	53.7	50.8	56.6
1-3 times per week	147	12,400	9.9	8.3	11.7
4-6 times per week	104	8,858	7.0	5.7	8.7
Daily	478	36,961	29.4	26.9	32.1

2003 MI PRAMS

Table 50:
Prevalence of folic acid awareness and/or instruction by a health care professional,
2003 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Total	1,430	114,971	100.0		
Awareness of folic acid/Instructed by healthcare professional					
Aware and Instructed	865	69,304	60.3	57.3	63.2
Aware, but not instructed	279	22,826	19.9	17.6	22.4
Instructed, but not aware	69	5,708	5.0	3.8	6.5
Neither instructed nor aware	217	17,133	14.9	12.8	17.2

2003 MI PRAMS

Table 51a:
Multivitamin consumption in the month prior to pregnancy by folic acid awareness and/or instruction by a healthcare professional,
2003 MI PRAMS

	No multivitamin					1-3 times per week				
	Sample Frequency (N)	Weighted Frequency (N)	Weighted Percent	LCI	UCI	Sample Frequency (N)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Total	739	60,014				133	10,595			
Awareness of folic acid/Instructed by healthcare professional										
Aware and Instructed	370	31,059	45.1	41.3	49.0	80	6,795	9.9	7.8	12.4
Aware, but not instructed	153	12,147	53.5	46.7	60.2	31	2,589	11.4	7.8	16.4
Instructed, but not aware	53	4,469	78.3	65.3	87.4	4	DSU	DSU	DSU	DSU
Neither instructed nor aware	163	12,339	73.9	66.1	80.4	18	1,211	7.3	4.1	12.7

2003 MI PRAMS

DSU: Data Statistically Unreliable

Table 51b:
Multivitamin consumption in the month prior to pregnancy by folic acid awareness and/or instruction by a healthcare professional,
2003 MI PRAMS

	4-6 times per week					Daily				
	Sample Frequency (N)	Weighted Frequency (N)	Weighted Percent	LCI	UCI	Sample Frequency (N)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Total	97	8,028				449	34,549			
Awareness of folic acid/Instructed by healthcare professional										
Aware and Instructed	59	4,891	7.1	5.4	9.3	350	26,085	37.9	34.3	41.7
Aware, but not instructed	27	2,246	9.9	6.5	14.9	66	5,711	25.2	19.7	31.6
Instructed, but not aware	3	DSU	DSU	DSU	DSU	9	491	8.6	4.0	17.6
Neither instructed nor aware	8	891	5.3	2.5	10.9	24	2,262	13.5	8.9	20.0

2003 MI PRAMS

DSU: Data Statistically Unreliable

Table 52:
Prevalence of WIC participation during pregnancy among income-eligible women,
2003 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Total*	680	55,340	100.0		
WIC Participation During Pregnancy					
Yes	514	42,160	76.2	72.2	79.8
No	166	13,180	23.8	20.2	27.8

2003 MI PRAMS

Total = Number of women found to be income-eligible for WIC. Women who participated in Medicaid prior to pregnancy, had Medicaid-paid prenatal care, Medicaid-paid delivery, or received federal income assistance were classified as being income-eligible for WIC.

Table 53:
Prevalence of WIC participation postpartum among income eligible women, 2003 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Total	675	54,773	100.0		
WIC Participation Postpartum					
Infant only	170	15,130	27.6	23.8	31.8
Mother and Infant	399	31,715	57.9	53.5	62.2
Mother only	10	536	1.0	0.5	2.1
Neither	96	7,393	13.5	10.7	16.8

2003 MI PRAMS

Total = Number of women found to be income-eligible for WIC. Women who participated in Medicaid prior to pregnancy, had Medicaid-paid prenatal care, Medicaid-paid delivery, or received federal income assistance were classified as being income-eligible for WIC.

Table 54:
Reason for nonparticipation among income eligible women, whose infant did not participate in WIC, 2003 MI PRAMS

	Sample Frequency (n)	Weighted Frequency (N)	Weighted Percent	LCI	UCI
Reasons					
Did not want to enroll infant	51	3,793	44.7	33.8	56.0
Other	27	2,035	26.7	17.7	38.2
Unaware of WIC	12	1,150	15.1	8.1	26.5
Infant not eligible	9	812	10.6	5.1	21.0

2003 MI PRAMS

Analysis restricted to women who were found to be income-eligible for WIC and whose infant did not participate in WIC. Women who participated in Medicaid prior to pregnancy, had Medicaid-paid prenatal care, Medicaid-paid delivery, or received federal income assistance were classified as being income-eligible for WIC.